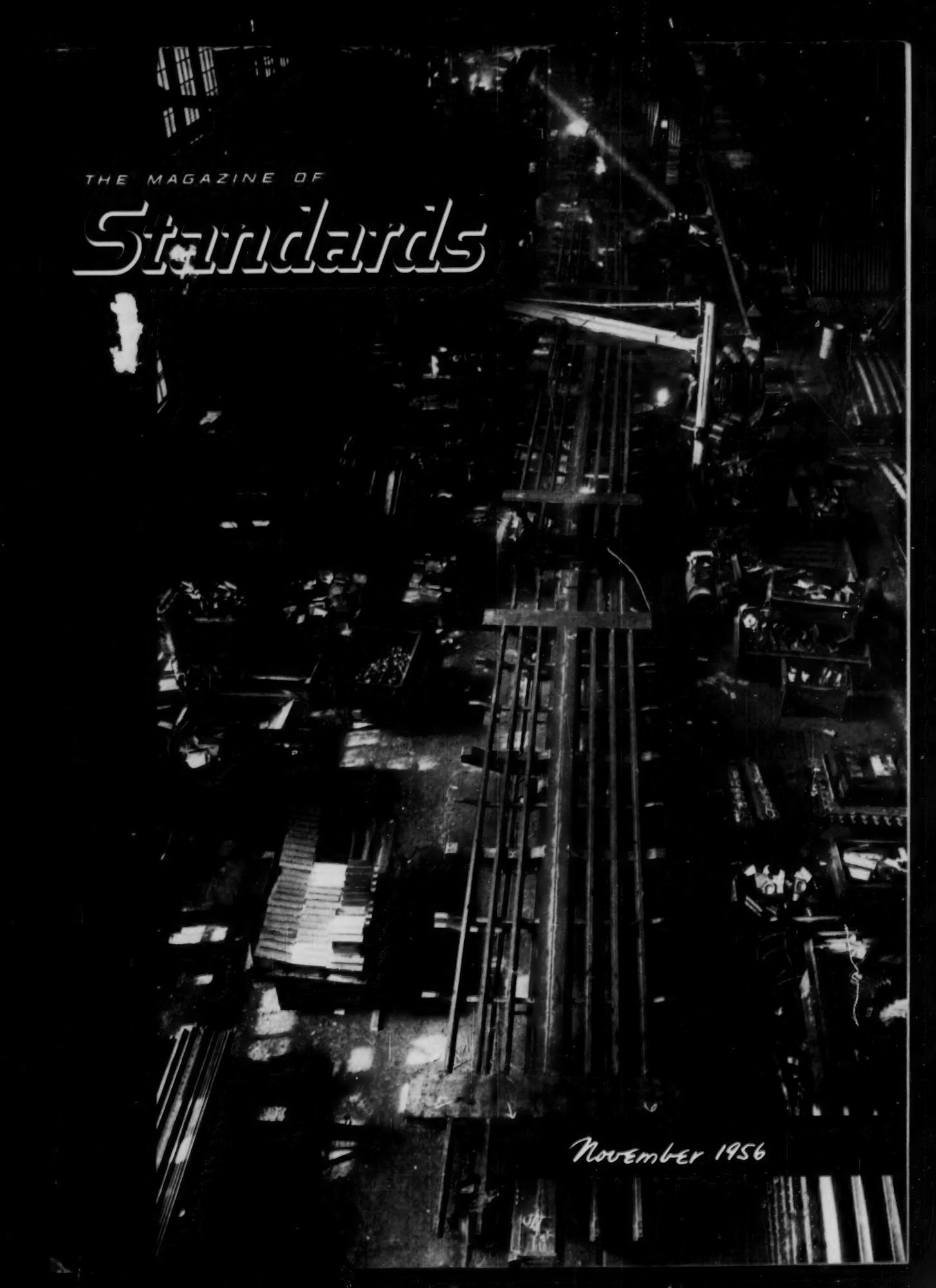
THE MAGAZINE OF
Standards
November 1956

THE MAGAZINE OF
Standards

November, 1956 Volume 27, No. 11

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Officers
H. Thomas Hallowell, Jr, *President*
Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director and Secretary*
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Ruth E. Mason, *Editor* Sheila Dressner, *Art and Production Editor*

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Marginal Notes

Developing the Standards Man—

As Madhu S. Gokhale, president of the Standards Engineers Society, has said (page 329), "The American Standards Association provides the machinery for developing standards; the Standards Engineers Society develops those who develop the standards." All concerned with this latter problem will be particularly interested in the "Standards Outlook" column by Professor Leo B. Moore this month (page 351). Mr Moore tells what he thinks are the qualifications for a standards man.

ASA and SES—

One event of special interest at the Standards Engineers Society annual meeting was the luncheon honoring founders of the Society. Of the 15 who attended the preliminary meeting January 14, 1947, which initiated the Society, four were present at the Founders' Luncheon, October 3, 1956. They were: Stanley Zwerling, Assistant Chief, Test and Approvals Division, Armed Services Electro - Standards Agency, Fort Monmouth, N. J., first president of the Society; Harold R. Terhune, manager of standards, Federal Telecommunication Laboratories, Nutley, N. J.; Harold Westman, editor, Electrical Communication, International Telephone & Telegraph Corporation, New York, chairman, ASA Graphics Standards Board; and Dr John Gaillard, Management Counsel, Briarcliff Manor, N. Y., formerly mechanical engineer on ASA's staff.

The idea of the Society originated as the brain child of a few individuals at the Army Electronics Agency (now the ASESA), Stan Zwerling said. It was discussed with Dr P. G. Agnew, then Secretary of the American Standards Association, who gave it his personal encouragement. Actual work was started when a small group met at luncheon at Janssen's Restaurant in New York to discuss the possibilities. The tablecloth used at that luncheon would have been an important historical treasure in the standards field, Mr Zwerling

says. On it was outlined in detail the pattern of what is now the Standards Engineers Society.

It seemed fitting, too, that a gold lapel pin with the SES seal was presented at the meeting to Vice Admiral G. F. Hussey, Jr, managing director of the American Standards Association, as the first Fellow elected by the Society.

Change in Prices of American Standards—

As in the case of almost everything else in these days of rising prices, changes in the price of many already published American Standards have been announced, effective October 1, 1956. If you have not received your announcement listing these changes, drop a line to the American Standards Association.

It is to your advantage to use your price list and send your orders for American Standards with check attached. Because of rising costs of operation, ASA recently announced a new invoicing policy. A handling charge of 50 cents will be added to the cost of all orders on which an invoice must be written.

The Front Cover—

Standards for box cars (page 325) have made possible the use of modern facilities in production, including mass production techniques and automation principles. Long runs of PS-1 cars are precision-built with millions of dollars worth of dies, jigs, and fixtures. This picture shows an underframe production line.

This Month's Standards Personality

W. L. BARTH has worked for the General Motors Corporation for more than thirty years. During those thirty years he has seen, and had a part in bringing about, almost revolutionary changes in his company, his industry, and in mechanical engineering generally. He has won an important place for himself in mechanical standardization not only in his company but also as a national figure.

His contributions to screw thread standardization, particularly the work on unification of threads by the United Kingdom, Canada, and the United States, brought him recognition by both the American Society of Mechanical Engineers and the Society of Automotive Engineers.

In presenting a "testimonial of regard" to him, The American Society of Mechanical Engineers expressed its appreciation of his "devoted and untiring efforts in the development of standards for screw threads." Speaking as administrative sponsor of Sectional Committee B1 on Standardization and Unification of Screw Threads, the Society expressed its "appreciation to him for this service to industry and the public." The testimonial was handed to him personally by the then ASME President, J. Calvin Brown.

The Society of Automotive Engineers also expressed its appreciation, citing him particularly for his work on unification of screw threads.

At General Motors, Mr Barth is engineer in charge of GM's Engineering Standards Section. He also serves as Executive Secretary of the GM Engineering Standards Committee. He has been in standards work in GM's central office for more than 20 years. Prior to his transfer to standards he had worked on research and design, having been in his early days, as he himself says, "a designer of everything you can think of."

In the automobile business he worked on the first Lincoln, worked for a while with Durant, New York, and then went to General Motors where he has been ever since.

For many years he has taken part in the standardization activities of the American Standards Association. As a representative of the Automobile Manufacturers Association, he is a member of the Mechanical Standards Board and served as chairman during 1955. He represents the SAE on a number of sectional committees, including small tools and machine tool elements, B5; bolts, nuts, rivets, screws, and similar fasteners, B18; washers and machine rings, B27; and classification and designation of surface qualities, B46. He is chairman of committee B27 and chairman of the executive committee of committee B46. He has been a member of both committees since 1933. On the important screw thread committee, B1 (he has been a member since 1937), his technical competence was recognized in his selection as a member-at-large.

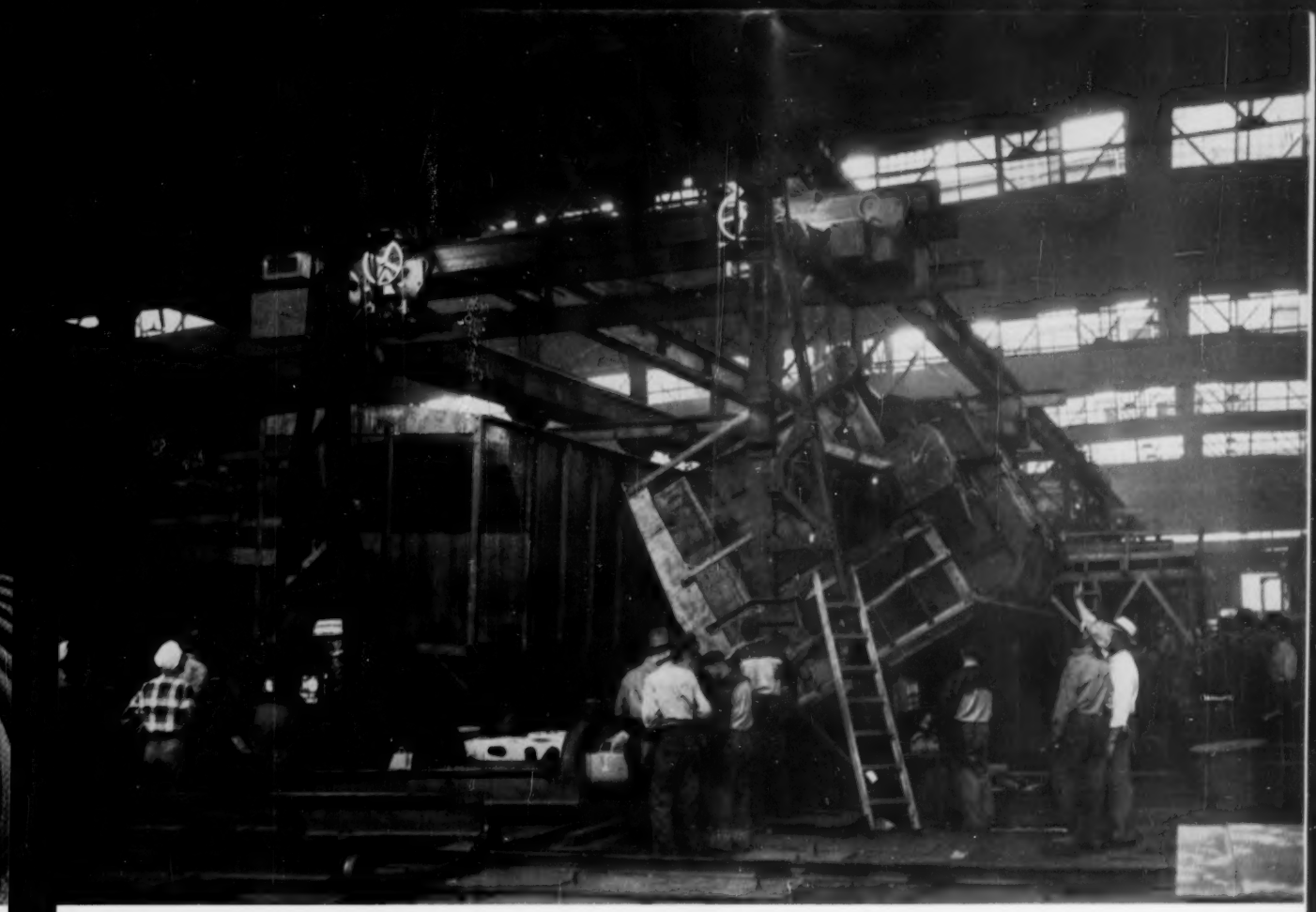
Perhaps the characteristic for which Mr Barth is best known in standardization circles is his ability to formulate and express a positive opinion without hesitation or uncertainty.

Freight Cars G

Above, left—*PS-2, the second of Pullman-Standard's standardized line of freight cars, is designed to carry a wide variety of bulk-lading clean and dry. PS-2's smooth interior makes it self-cleaning, fast unloading and corrosion-resistant.*

Above, right—*Positioner in action at the Butler, Pa., plant on PS-2 production line.*

Left—*Pullman-Standard designed positioners turn entire cars during manual welding. Turn-around of car during assembly permits down-hand welding, making work of welder easier and insuring accurate and positive workmanship.*



STANDARD

By Charles W. Bryan, Jr
President, Pullman-Standard Car Manufacturing Company

TEN years ago, Pullman-Standard Car Manufacturing Company realized that if the railroads were to retain their leadership in American transportation a new concept—standardization of freight rolling stock—must be advanced.

A better car was needed that would serve equally well on all parts of the great American railway system—one that would shrug off the many hardships that interchange imposes. This new car would have to be dependable, keep maintenance costs at a minimum, be available at moderate cost and earn complete shipper acceptance.

The creation of such a car would involve costly research, engineering and testing, expensive tooling, and carry the risk of causing a serious break with long-entrenched railroad tradition. Instead of becoming more intensively customized, the freight car best able to serve the railroads would be standardized.

Although standardization of product is not new in many branches of American business, it was new in the railroad car field 10 years ago. Until Pullman-Standard introduced standard freight cars, all freight cars were custom-built to railroad specifications and consequently of infinite variety.

This lack of standardization in freight car design made it impossible for carbuilders to control production schedules and called for costly shop change-overs between lots of cars with the resultant interruption in car production.

The employment of better and more permanent but costly jigs and dies was impossible as long as no two railroads ordered identical equipment. Therefore, carbuilders found themselves merely assemblers of parts purchased from suppliers specified by the railroads. True mass production of equipment and continued improvement of product were impossible.

In 1946 Pullman-Standard took steps to reverse this trend. Drawing on its more than 79 years of carbuilding experience, the company proceeded to develop a car design that would meet all the in-service problems that were so hard on custom-built cars. New designs were engineered and thoroughly proven by laboratory tests that accurately simulated the in-service conditions.

The workhorse of the railroad's freight service—the box car—was

Entire side *for a PS-1 standardized freight car is pre-fabricated. This is one of the five main steps in car assembly.*

chosen as the logical car for standardization. Pullman-Standard, realizing that true mass production could be reached only by the complete use of standards, designed the car to use component parts engineered and manufactured in its own shops.

This greater use of its own facilities gave Pullman-Standard smoother, steadier, and more centralized control in production even though the investment in tools, dies, and jigs was costly. This new method, however, developed other advanced techniques and automation principles impossible for use in the construction of custom-built cars.

The components of the PS-1 box car are engineered and manufactured to act together as a sound, durable unit. The manufacturing facilities at the Pullman-Standard freight car plants have become more extensive and are designed to take full advantage of the efficiency, economy, and quality control made possible by a standardized product.

Thus the buyer of the PS-1 gets the

Pullman-Standard *maintains a corps of specially trained service and sales engineers who travel more than* 100,000 *miles per year confirming the performance of the standardized cars. The men review the findings, evaluating benefits and shortcomings for consideration on future lots of freight cars. This makes certain that the cars are completely filling the needs of other users.*

advantage of experienced engineering and specialized manufacturing facilities geared to the universally acknowledged benefits of continuous production.

Since the first PS-1 was delivered to the Lehigh Valley railroad early in 1947, frequent and continued critical inspections by Pullman-Standard's Sales and Service Engineers in the field as well as advances in materials and production methods have resulted in numerous improvements in successive lots of PS-1s. One of the major advantages of the best concept of standardization is that it includes flexibility to keep pace with the railroad industry's changing requirements.

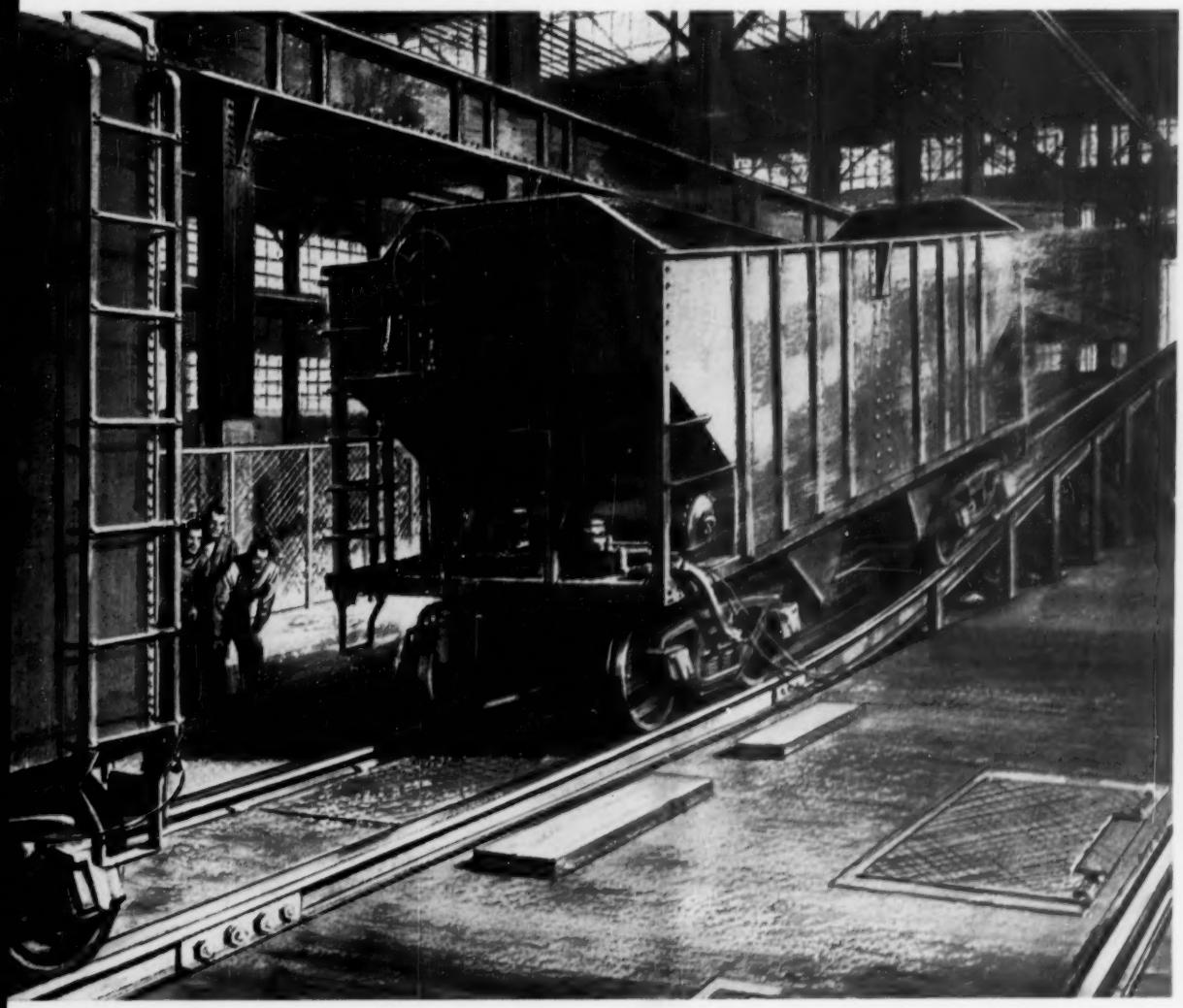
Railroad acceptance of the PS-1 box car is indicated by the fact that since its introduction, nearly one out of every four box cars built in America has been a PS-1. Today, more than 85,000 PS-1s have been put into service or ordered by 76 different users.

In recent years Pullman-Standard has successfully introduced three other standardized models to its line of freight car products. These include the PS-2 covered hopper car for the shipping of dry granular materials in economical bulk form; the PS-3 open top hopper car for coal and other products; and the PS-4 all-purpose flat car, which can be equipped with bulkheads for special service, or include hold-down devices for piggy-back use.

These cars, too, although introduced more recently, appear destined for the same popularity accorded Pullman-Standard's first standardized car. The company will continue to promote the sale of this line and will add other standard products to fit the needs of the railroads.

In addition to the millions of dollars expended in the past 10 years, Pullman-Standard, further demonstrating its faith in its standardization program and the future of the nation's railroads, is now undertaking a new multi-million dollar modernization program at its Bessemer, Ala., and Butler, Pa., plants, to give it both added production capacity and versatility for the future requirements of the railroads.

Impact tests *are made to determine car reaction to collision impacts at high speed.*



1—Speakers on Nuclear Energy—Brigadier General O. J. Gatchell; Cyril M. Sweeney, vice-chairman of the Society's Washington Section; Dr Henry Hausner. **2**—*Charles H. Topping illustrates his talk on new concepts in building materials and equipment by mixing ingredients to make a urethane foam used in the new elastic and rigid foam materials now on the market. Allowing the foam to rise like bread, the final product was displayed at the end of the meeting. At right is Richard L. M. Rice, Standards Engineer of E. I. duPont de Nemours & Co.* **3**—*Robert F. Harvey, chief, Mechanical Equipment Branch,*

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Standards—Guides for Tomorrow

The Standards Engineers Society

Fifth Annual Meeting

Standardization Division, Office of the Assistant Secretary of Defense (Supply & Logistics), with Mr Topping (right) examine samples of hardened urethane foam included among the new chemical building materials displayed by Mr Topping. **4**—*Speakers at the Annual Banquet—W. R. Divine, Assistant Comptroller, Southern Railway System; M. S. Gokhale, SES president; Harry H. Fite, vice-president and Washington manager, Lester B. Knight & Associates, Inc.; Edmund D. Dwyer, Chief, Navy Management Office, U. S. Department of the Navy.* **5**—*Fulton R. Magill, manager, Central Standards Department, Rockwell Manufacturing Co., Pittsburgh, greets Charles M. Wright, Supervisor, Engineering Standards, Chrysler Corp, Detroit, at the session on Decimal Dimensioning.* **6**—*At the Drawing Practice session—Walter A. Johnson, Executive Engineer, Modern Design Division, H. C. Schloer, Inc; William L. Healy, General Electric Co, co-author* Simplified Drafting Practice; *Antoine F. Gagne, Jr, Consulting Engineer, Binghamton, N. Y., moderator of the session; Charles W. Bowler, National Secretary, Standards Engineers Society; Donald H. Reed, Chief Draftsman, Scintilla Division, Bendix Aviation Corp, Sidney, N. Y.*

Photos by John M. Ward

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TWICE as many sections were affiliated with the Standards Engineers Society when Madhu S. Gokhale, the Society's president, opened the Fifth Annual Meeting at Washington D.C., October 3, as had been the previous year. This brings the total number of sections to twelve, he reported, including two in Canada. In addition, a member in The Netherlands has inquired about the possibility of establishing a section to include membership in Holland and Belgium, and a similar inquiry has been received from England.

"To provide a suitable guide for other branches of engineering is our primary function," Mr Gokhale pointed out. "With the advent of complex mechanisms required for printed circuitry, automation, electronic computers, and utilization of nuclear energy, it is highly desirable that standardization be considered in the early stages of research and design. That responsibility as members of the Society is ours." If standards, as guides for tomorrow, are lacking in any field, it is the responsibility of members of the Society to encourage their establishment, he declared.

In answer to inquiries concerning the relationship of the American Standards Association and the Standards Engineers Society, Mr Gokhale pointed out that ASA provides the machinery for developing

standards; the Standards Engineers Society, on the other hand, "develops those who develop the standards."

Some 200 members of the Society, responsible for coordinating practices, improving interchangeability, and developing specifications in their companies and in government departments and agencies, attended the meeting.

An important feature was presentation of the first award ever to be made for a technical paper on standardization (page 333). In addition, four members of the Society who have given distinguished service in standardization were awarded Fellowships in the Society (page 332).

The technical sessions included discussions of new concepts in building materials; metals standardization; how to organize company standards work; ABC unification; drawing practice; screw threads; antifriction bearings; and standardization in the Department of the Army.

CHEMICAL industry products with application to the building industry were described as possible standards of the future, by Charles H. Topping, Senior Architectural and Civil Consultant, Design Division, Engineering Department, E. I. du Pont de Nemours & Company, Wilmington, Delaware. Mr Topping spoke in the session on New Concepts in Building Materials and Equipment. He suggested applications for foaming materials, plastics, synthetic rubbers, synthetic papers, and porcelain enamel on aluminum. Although higher unit costs may be a deterrent to the employment of chemical industry products in the building industry, he said, the great advantages many of these materials possess—excellent strength; insulating and acoustical properties; resistance to corrosion, acids, mildew, aging, and changes in dimensions caused by moisture; toughness and scuff resistance—contribute to their ever-increasing popularity. Cooperation between the building and chemical industries will encourage the use of such materials as standards for construction.

With the need for interchangeable parts and accuracy of manufacture, adoption of decimal dimensioning in place of fractional dimensioning is a necessary and very worthwhile step, declared Charles M. Wright, Supervisor of Engineering Standards, Chrysler Corporation, Detroit, Michigan. Mr Wright was speaker at the session on Decimal Dimensioning. Mr Wright expressed the belief that use of decimals of an inch obviates any need for adoption of the metric units of measurement. He considered the only significant advantage of the metric system to be that its units are all multiples of ten. Calculations and specification of dimensions are made equally simple if decimal dimensioning is used, he said.

Recent adoption of the American Standard for decimal inch dimensioning scales is a timely contribution in view of the present vast expansion of industry. Application of decimal values to bolts, rivets, cables, angles, thread sizes, drills, and materials such as rods, bars, plates, etc, is a definite trend seen by Mr Wright.

"THERE are no standards in Nuclear Engineering," according to Dr Henry H. Hausner, General Manager, Nuclear Engineering Division, Penn-Texas Corporation, New York, N.Y. In his opinion, standardization is highly desirable in order to reduce costs through conservation of manpower and materials. This is an essential in the reactor industry. Cost of power obtained from nuclear reactors is still much too high to make nuclear power a serious competitor to power obtained from coal, oil, or water power, he said.

Dr Hausner estimated that from 60 to 70 million kilowatts will be produced by nuclear power reactors in this country in 1964. In approximately 8 years, between 3000 and 8000 million dollars will be spent by the industry. Expansion in other countries may be more rapid because of their lack of oil, gas, or coal. This development is postulated on a reduction in the present high cost for the design and construction of nuclear plants. Better understanding among nuclear engineers and improvement in safety aspects were other benefits foreseen through immediate initiation of planning for standardization.

Brigadier General O. J. Gatchell (USA Ret.), Special Assistant to the Director of General Engineering Laboratories, American Machine and Foundry Company, New York, N.Y., traced the progress of standardization for the industrial use of nuclear energy. Development of standards at the beginning of a new art, rather than after nonstandard practices have become entrenched, has been the basic idea of the American Standards Association's Planning Committee on Standardization, he said. A meeting in Washington, D.C. on October 8, 1955, attended by representatives of the Atomic Energy Commission, the National Bureau of Standards, the American Standards Association, and the Atomic Industrial Forum, was the start of ASA's activity. Now a Nuclear Standards Board has been set up and is beginning its work under ASA's procedures.

"Standards at The Stanley Works (A Medium Size Company)" were described by George E. Gilpatrick, Product Line Engineer, The Stanley Works, New Britain, Conn. The company has been a manufacturer of hardware items for 113 years. In the materials field, it has found that national standards can be adopted in a majority of cases. These are collected, reviewed, indexed, and included in a materials standards book. Parts standards are developed in much the same manner. Standard parts peculiar to the company are identified by a ten-digit number which serves to identify and describe the part. Procedural and engineering standards are a third group studied. In this case the Assistant Chief Engineer and the Chief Draftsman have collaborated in reviewing existing company procedures and developing a series of standards for the Engineering Department. At the present time, work on a series of standards for finishes and a set of

Madhu S. Gokhale, president of the Standards Engineers Society (left) and H. Thomas Hallowell, Jr, president of the American Standards Association, discuss Mr Hallowell's booklet describing methods of gaging screw threads. Mr Gokhale is manager of mechanical standards, Radio Corporation of America, and Secretary of the RCA Standards Policy Committee. Mr Hallowell is president of the Standard Pressed Steel Company.

maintenance and stores standards is underway.

Lack of a formal standards program at the Bristol Company had created major problems, said John E. Emmett, Standards Engineer, The Bristol Company, Waterbury, Conn. Training of new employees was difficult and time-consuming, the number of parts issued and carried in stock had grown into a staggering total, and cost of parts was high. In 1945 a standards engineer was appointed and a standards committee was established. All development work is done by the standards engineer. The standards committee reviews and approves standards. Through their review, assurance is gained that a standard is acceptable to both the engineering and manufacturing departments. As a result of this activity, the major problems were solved.

Standardization for the median or mid-range company was described by William B. Lewis, Standards Engineer, Pratt and Whitney Company, West Hartford, Conn. At Pratt and Whitney a "one-man" system is used, he said. Ideas for standards may come from anyone in the plant. The "one-man," the standards engineer, first investigates the feasibility of a proposed standard, contacting the foreman, workmen, and inspection supervisor as required. With background data and need for a standard established, the standards engineer prepares a draft which is discussed with people qualified on the matter. Then the proposed standard is circulated by letter to such people as the Production Manager, the General Foreman, the Chief Inspector, the Chief Engineer, and the Director of Purchases. After all comments are resolved by the one-man, the standard is issued and distributed throughout the plant. In Mr Lewis' opinion, the "one-man" organization for standards in a median company is a fine one. Mr Lewis also described a "one-committee" system which he had investigated. With a single reviewing committee, rapid action could be taken with a relatively small expenditure of time by the committee members.

THE statistical methods used to study variability in some of the processes and products of the steel industry were described by John W. W. Sullivan, Metallurgical Engineer, American Iron and Steel Institute, N. Y., at the session on Metals Standardization. After giving the mathematical background of the subject, application to cases involving the hardness of a constructional alloy steel and the thickness of a hot-dipped tin plate was described. Through use of statistical analysis, it was possible to set the hardenability limits for grade 4032H steel within technical and economic limits. This insured that this grade of steel will have uniform properties even though produced by different companies in different localities. In the case of the tin plate, statistical analysis enabled process conditions to be fixed so that a uniform, quality product was produced at a high rate with a minimum wastage of zinc. Use of statistics to establish samp-

(*Continued on page* 333)

Four Fellowships Awarded

Left — R. C. Sogge. Above — Roger E. Gay presents award to Dr Gaillard as Mr Healy watches.

FELLOWSHIPS were awarded by the Standards Engineers Society to four members who have made outstanding contributions to standardization at the Society's Fifth Annual Meeting, Washington, D. C., October 5.

R. C. Sogge, General Electric Company; Dr John Gaillard, Consultant; Virgil M. Graham, Radio-Electronic-Television Manufacturers Association; George F. Habach, Worthington Corporation were honored.

In presenting the awards, William L. Healy, General Electric Company, called attention to the new Fellows' outstanding achievements.

Dr John Gaillard

Dr John Gaillard has contributed much to standardization during this last thirty years as mechanical engineer on the staff of the American Standards Association (ASA) and as originator of the nationally-known Gaillard Seminars.

John Gaillard was born in The Netherlands and received a degree of Mechanical Engineer and Doctor of Technical Science from the Institute of Technology in Delft. The later degree was awarded for the basic study in industrial standardization published in this country under the title, **Industrial Standardization, Its Problems and Applications.**

In 1947 he became the first lecturer on standardization in Columbia Graduate School in the Department of Industrial Engineering. Dr Gaillard is a member of the American Society of Mechanical Engineers, Society for Quality Control, the Society for Advance of Management, and a charter member of the Standards Engineers Society of which he is a director. He was awarded the Standards Medal by the American Standards Association for his outstanding services.

Virgil M. Graham (left) receives award from William L. Healy. Mr Graham looks on as Mr Gokhale presents award to G. F. Habach (left, below).

George F. Habach

Mr Habach graduated from Stevens Institute of Technology with the Degree of Mechanical Engineering in 1929 and got his Master's Degree in 1936 from the Polytechnic Institute of Brooklyn.

He is vice-president in charge of engineering of the Worthington Corporation.

Mr Habach has always given liberally of himself to the work of standardization. He was named chairman in 1955 of the American Standards Association important Sectional Committee on Small Tools and Machine Tool Elements. He is a member of the American Society of Mechanical Engineers and Secretary of the Machine Design Section, American Society of Mechanical Engineers.

Virgil M. Graham

Mr Graham has long been connected with standardization. In 1923, after attending the University of Rochester, he started his career with the Stromberg-Carlson Manufacturing Company. He became director of Technical Relations of the Sylvania Electrical Products Corporation and had responsibility for the company's standardization program. In 1931 he became chairman of the Standards Section of the Radio Manufacturers Association, Engineering Committee, the forerunner of the Radio-Electronic-Television Manufacturers Association.

He is now associate director of the RETMA Engineering Department and chairman of the Joint Electron Tube Engineering Council (JETEC) of RETMA and NEMA.

Mr Graham served as chairman of many standardization committees including the American Standards Association Sectional Committee C16 on radio. He is a Fellow of the Institute of Radio Engineers (Australia) and Radio Club of America.

R. C. Sogge

Mr Sogge is manager of Engineering Standards for the General Electric Company. He is president of the United States National Committee of the International Electrotechnical Commission and headed the delegation that represented the United States at the annual meeting of the Commission in Munich, Germany.

In June he was selected by the American Institute of Electrical Engineers (AIEE) to represent the United States at the Centennial celebration in honor of Nikola Tesla in Yugoslavia. As the Institute's representative, he presented the plaque for the American Institute of Electrical Engineers (AIEE) in honor of Tesla.

Mr Sogge has the degrees of LLB and LLM from the John Marshall School of Law.

(*Continued from Page* 331)

ling inspection plans was also described by Mr Sullivan. Evaluation of the quality of continuously extended products such as hot-rolled steel in coil form is still a problem. Quality analysis is made difficult when samples are only removed from the ends of a coil.

Dr John W. Hood, Assistant Chief Metallurgist, Aluminum Company of America, Pittsburgh, Pa., covered problems in the standardization of aluminum and aluminum alloy materials and forms that have appeared and been resolved in various ways during the past 66 years. He described the answers that have been developed under six main categories: (1) alloy or composition, (2) mechanical properties, (3) surface equality or appearance, (4) dimensions, (5) internal structure and soundness, and (6) special characteristics (such as workability and electrical conductivity).

"Unification of standards in the whole of the inch-using countries is of vital importance," declared George Noble, Standards Engineer, Dominion Engineering Works Limited, Montreal, Canada. Mr Noble presented the Canadian viewpoint on the ABC standards unification project. He reviewed past progress of American-British-Canadian standardization which was highlighted in 1948 by the adoption of the Unified Thread Standard. Further conferences in 1950 and 1952 served to increase interest and expand the scope of activity. A slow-down in progress as a result of possible relaxation in the cold war, delays caused by inexperienced personnel, limitations on the scope of the effort, and lack of proper publicity are four problems which must be faced. In the past, Canadian representatives have suggested compromises and resolved differences between British and American points of view, Mr Noble said. With the rapid advance of Canadian industry, Canadian representatives should be even better equipped for this role in the future.

Until the summer of 1947 British service standardization activities had been concerned largely, if not entirely, with work within the United Kingdom, explained Brigadier Ralph H. Farrant, Director of Munitions, Ministry of Supply Staff, British Joint Services Mission, Washington, D.C. As a result of wartime difficulties, the War Office entered into an agreement with the U. S. and Canadian Armies which produced the ABC Army Standardization Program, Brigadier Farrant said. This program is divided into non-material and material subjects. The former embraces operations and tactics, the latter, equipment and parts.

Most of the work on the material side is handled by the British Ministry of Supply, an organization with no counterpart in the United States. Research, development, procurement, standardization, and cataloging functions are combined in the Ministry of Supply, which carries out this work for all the services.

The U. S. Federal Cataloging Program has been adopted by the United Kingdom. So far some 25,000 items have been cataloged. Brigadier Farrant believes the cataloging program will create a common supply language for the United Kingdom, Canada, and the United States. Extension to the other NATO nations is underway also.

As a result of the ABC Army standardization program, agreement has been reached on a variety of items, such as rockets and rocket launchers, mobile bath units, towing hooks and eyes. Although the time required for progress is often disappointingly long, Brigadier Farrant concluded that "there is progress and progress there will continue to be, as long as there exists the spirit and desire to get the job done, to work together to keep our nations free and, at the same time, to keep the cost to the minimum."

Charles L. Eiwen

Honored for Standards Paper

Charles J. Eiwen's paper "Standardization Research" was winner of the first award ever to be presented for a technical paper on standards. Its selection as the best paper entered in the Technical Papers Contest was announced at the Awards Luncheon during the Fifth Annual Meeting of the Standards Engineers Society, October 4. The papers entered in the contest were judged on the basis of material, ideas, content, and completeness, as well as on how the paper would appear when published. The award was given by the Washington Section of the Society.

Mr Eiwen is electrical engineer in the Office of Standardization, Office of the Assistant Secretary of Defense, Supply and Logistics, Washington, D. C.

Judges of the contest were Leo B. Moore, Assistant Professor, Massachusetts Institute of Technology, Cambridge, Mass., author of the column Standards Outlook; Arnold B. White, Carrier Corporation, Syracuse, N. Y.; Madhu S. Gokhale, RCA Victor Division, Camden, N. J., president of the Society; and William L. Healy, General Electric Company, Philadelphia, Pa., past president of the Society.

In announcing their decision, the judges expressed the hope that this award "may serve to stimulate and encourage others to contribute to our fund of knowledge."

A PROPOSAL first presented at a meeting of the British Institution of Mechanical Engineers in November 1944 has become an accepted part of standards in several countries, declared Donald H. Reed, Chief Draftsman, Scintilla Division, Bendix Aviation Corp., Sidney, N. Y. Mr Reed spoke at the session on Drawing Practice Standardization. The proposal to which he referred provides for a system of positional dimensioning and tolerancing.

Mr Reed described the application of the system to an electric connector plug assembly. The connector contained 60 contacts in each assembly, sockets on one and pins in the other. The details must be so designed that all the electric conductors connect and disconnect readily. In order to secure accurate alignment, close tolerancing is essential. By means of positional dimensioning and tolerancing, a much simpler drawing can be prepared—a drawing which is much easier to interpret than one prepared in conventional fashion. A vast amount of saving in time was envisioned by Mr Reed through the use of the new method.

True position dimensioning and tolerance and simplified drafting were discussed from the viewpoint of the "Engineering Service Organization" by Walter A. Johnson, Executive Engineer, Modern Design, Division of H. C. Schloer Inc., Vestal, N. Y. This type of organization is a newcomer to the engineering world, having established itself since World War II, he explained.

The engineering service organizations render a variety of services to industry and government, extending from routine drafting, design, and engineering through research and development. Such companies must conform to the drafting practices of many diversified companies and agencies. Mr Johnson commented on various simplification techniques and indicated how each might be viewed by the variety of customers served by engineering service organizations.

H. L. Durst, Associate Professor, Broome County Technical Institute, New York, called upon industry for assistance in devising techniques to express requirements on drafting practices in the simplest possible manner consistent with clarity. Mr Durst's paper was read in his absence by A. F. Gagne, Jr., Consulting Engineer, Binghamton, N. Y. If simplified fundamentals were at the disposal of instructors, he said, it would save the student's time on each exercise performed at the college drawing board, thereby providing better trained engineers and technicians.

Mr Durst asked that steps be taken to establish standard industry-wide simplified drafting practices.

Dr A. T. McPherson, Associate Director, National Bureau of Standards, Washington, D. C., spoke at the session on screw thread standardization. After calling attention to the Great Fire of Baltimore, the catastrophic proportions of which could have been reduced through the standardization of fire hose and coupling threads, Dr McPherson pointed out some of the many factors that must be taken into consideration in specifying form and size of screw threads before going into the matter of materials and product design. The proposed revision of Handbook H-28 spells out many of these factors, he said.

Class 3A designates the highest grade of interchangeable fit for an externally-threaded fastener, said H. Thomas Hallowell, president, Standard Pressed Steel Company, and president of the American Standards Association. Screws of this class provide the closest, soundest fit in a mating nut or tapped hole. But to be certain that he is getting this quality in every purchased lot, the user must check fasteners to the 3A tolerance limits with a sound system of gaging. Mr Hallowell then went on to outline the details—the "do's and don'ts"—of such gaging.

Improved quality is a direct result of standardization in the opinion of Carl W. Moeller, Gage Sales Engineer and Supervisor of the Conventional Gage Sales Department, Pratt and Whitney Company, West Hartford, Conn. Through standardization, adherence to specifications is made more probable. Standardization has also led to many improvements and refinements in measuring equipment. Mr Moeller described a metrology room and the gages which it may contain. In parternal and external threads, explaining the operation and the necessary precautions that must be taken. Examples of the various gages were demonstrated.

SPEAKING on the "Military Standardization of Anti-Friction Bearings," Anthony J. Ruffini, Assistant Head, Bearing and Oil Seals Branch, Bureau of Ships, Department of the Navy, said that this subject deals with the magnitude of the bearing area to be standardized, the approach to be used, the tools contemplated, and the results to be attained. The basic tool to be used is the Military Standard Identification Code, MIL-STD-102A, which offers a shorthand technique for describing bearings.

Mr Ruffini also discussed the plan to coordinate the standardization efforts of the military with those of industry.

Standards should have no barriers of nationality, industry, color, or creed, declared J. M. Bryant, Chief Engineer, Ball and Roller Bearing Plant, Link-Belt Company, Indianapolis, Indiana. Mr Bryant spoke on "Standard Guides for Tomorrow (International Aspects)." If all needs are not considered when a standard is developed, future difficulties can be expected, he pointed out. Present work on an international ball and roller bearing identification code illustrates an approach which will produce a true guide for tomorrow.

During a total of 12 meetings, 107 major decisions have been made by the 54 delegates from 14 nations composing the international Ball and Roller Bearing Committee, ISO/-TC4. The wide use of bearings, the need of multiple sources of supply, and the supply and maintenance problems encountered in the war period have encouraged development of a standard identification

On ABC Unification—*Frank Philippbar, American Society of Mechanical Engineers, who presented a paper for Frank Tisch, Pheoll Manufacturing Company; George Noble, Dominion Engineering Works, Ltd, Montreal, Canada; Franklin E. Powell, Office of Deputy Chief of Staff for Logistics, U.S. Department of the Army (moderator); Charles W. Bowler, Secretary, Standards Engineers Society; Brigadier Ralph H. Farrant, Director of Munitions, Ministry of Supply Staff, British Joint Services Mission.*

code. Work of the committee has resulted in a plan for an alphabetical numerical identification code, some details of which still remain to be settled. Mr Bryant described the results of the ISO/TC4 meeting on September 24-26 at Vienna, Austria.

All phases of standardization efforts in the Department of the Army were covered by Lt. Col. William B. Erwin, Storage and Distribution Division, Office of Deputy Chief of Staff for Logistics, U. S. Department of the Army, Washington, D. C. As in the solution of any large and complex problem, it is necessary to divide and subdivide the issues involved into comprehensive segments, or in terms of the engineer, into panel points, and then apply our studies and actions concurrently against those segments in order that we may avoid waste, overlapping efforts, or failure.

Accordingly, the program was divided into the following nine related fields and identified as subprojects in the overall Standardization and Elimination Program:

1. Consolidation of all items within a single catalog system.
2. Elimination of nonessential items from troop authorization lists.
3. Elimination of nonessential repair parts.
   (The majority of the parts were physically inspected to determine for each particular part, if (a) it is a particular part in contrast to common hardware; (b) it should be used in combination with other parts or as an individual part; (c) it can be fabricated in the field from common bulk stocks; (d) it is interchangeable with another part; (e) the mortality of the part is below the economic life of the end item.)
4. Geographical standardization .
5. Equipment standardization.
6. Local procurement.
7. Procurement without advertising.
8. The modern Army supply system.
9. The property disposal program.

MANAGEMENT Standards was the subject presented at the annual banquet. E. D. Myer, Chief, Navy Management Office, U. S. Department of the Navy; W. R. Divine, Assistant Comptroller, Southern Railway System, Washington, D. C., and Harry H. Fite, vice-president and general manager, Lester B. Knight & Associates, Washington, D. C., were the speakers.

Automation is not the sole answer to increased industrial production in the labor-short decade ahead, Dr W. R. G. Baker, General Electric Company vice-president, said at the Awards Luncheon. Dr Baker is also president of the Radio-Electronic-Television Manufacturers Association.

Without increased standardization of industrial and engineering processes, "automation cannot ever fulfill its potential usefulness," he said.

As more and more companies turn to various types of automation, there is an "ever-burgeoning need for engineering standards," Dr. Baker said. However, he added, "I am sometimes sorry to see that such an important thing as standardization is frequently met by opposition from the people who could most profit by it."

Stating that in 10 years our present population of about 168 million will probably swell to the 200 million mark, Dr Baker said that "we cannot wait until the 1960's if we are to have in place in time the manufacturing and commercial facilities, the homes, transportation, schools, and hospitals required to fill the needs of 200 million persons."

He said the nation's industries must be willing to embrace change and invest more in productive machinery and methods to produce 40 percent more goods and services with only 14 percent more workers. "In plain words, that means more automation," he explained.

"If automation is to be the salvation of our economy, then standardization is the handmaiden of automation. I say this because without increased standardization, automation cannot ever fulfill its potential usefulness."

Dr Baker advised the engineers to "make it a point always to show the individual concerned how engineering standards can help. He may lose some of the variations he had in the past but his over-all efficiency will be increased," he said.

TRAVEL BY COLOR

Florida recommends adoption of color for highway markers

By GORDON R. ELWELL
Director, Information and Research, State Road Department of Florida
Tallahassee

FOR many years numbered route markers have guided motorists to their destination over Florida's highways, but something new is being added to make the going easier—and that is color.

The State Road Department of Florida plans to erect colored route markets on all federal highways and, in this respect, leads the nation. Connecticut has colored route markers on U. S. 1 and South Dakota is using some colored route markers. In September, the Florida Road Department started and completed erecting the colored route markers on U. S. 27 which enters Florida just north of Tallahassee, swings through the central part of the state, skirts the southern edge of Lake Okeechobee, and terminates at Miami—498 miles and 702 markers later.

Department maintenance engineers, who have responsibility for the project, say all federal highways will have the colored route markers within a year.

Wilbur E. Jones, Florida's Road Board Chairman, said he hoped other states would follow Florida's lead in establishing the colored route markers on federal highways and work out an agreement on standardization so that motorists could follow the same colored route markers over the entire length of federal highways.

Florida has decided to use red colored route markers on U. S. 1 because Connecticut is using that color already on the same highway. If other intervening states should adopt the same color scheme for the federal highways, a tourist could leave Connecticut and go all the way to Key West following red route markers on U. S. 1.

The color scheme adopted by the Florida Road Department, and which officials hope other states will adopt as a standard follows: U.S. 1—red; U.S. 17—yellow; U.S. 19—red; U.S. 23—green; U.S. 27—green; U.S. 29—red; U.S. 41—orange; U.S. 90—blue; U.S. 92—blue; U.S. 98—black; U.S. 129—brown; U.S. 192—green; U.S. 221—brown; U.S. 231—yellow; U.S. 301—yellow; U.S. 319—yellow; U.S. 331—green; U.S. 441—brown.

Engineers were able to assign colors to the various federal highways so that, in no instance, does the color of one highway's markers cross that of another federal highway.

The route markers being used in the new project are much larger than the regular U.S. route markers and the numerals are much easier to see than were those on the old type. The signs measure 24 inches by 24 inches with numerals approximately 12 inches high, or more than twice the size of the old markers.

The signs are also reflectorized, thus making it easier for a motorist to see them at night. The markers are placed every 2½ miles on alternate sides of the road.

In addition to the 702 route markers, engineers put up 290 directional arrows on U.S. 27. On Alternate U.S. 27, 136 route markers and 54 arrows were erected.

The route markers being used have colored shields on a white background with white numerals superimposed on the shield. In the case of alternate routes, the colors are merely reversed. For instance, the markers on U.S. 27 have green shields on a white background and white letters on the shield but on alternate U. S. 27 the markers have white shields on a green background wtih green numerals on the shield.

The signs are made of aluminum which maintenance engineers have found to be far more satisfactory in Florida than steel signs, especially in coastal areas, where steel signs rust out in two to three years. Use of the aluminum signs more than doubles the life of the route markers in inland areas.

In cities and towns where motorists might possibly become confused and turned around, the new colored route markers bear the legend "north" or "south."

In commenting on the adoption of the color scheme for Florida highways, Road Board Chairman Jones said use of colors on the signs will "prove a definite safety factor by enabling the motorist to more readily follow the route by observance of the continuous color, as well as by number."

He pointed out that use of color will be of particular value at intersections where, often, a half dozen or more different route signs on one standard face the fast-moving motorist.

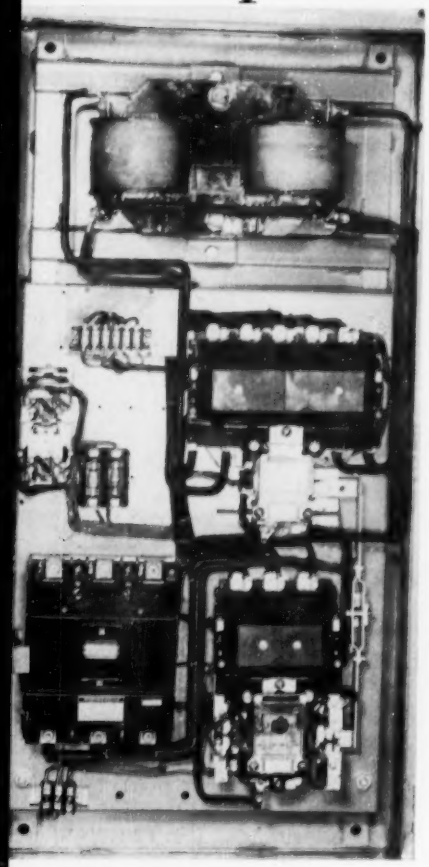
Mr Jones emphasized his desire for standardization of use of the color signs, saying that other states will be encouraged to initiate similar programs using the same color system.

"In traveling, all of us at one time or another have been faced at some busy intersection with eight to ten signs, all the same color, and have had to come almost to a standstill in traffic to find the correct route number," the Road Chairman said.

"With a standard color for each route, this problem will be solved and a dangerous and annoying traffic hazard reduced to a minimum," he declared.

Up To Date Terminal Markings

By C. B. HATHAWAY
Westinghouse Electric Corporation, Chairman, Sectional Committee on Rotation, Connections, and Terminal Markings for Electric Power Apparatus, C6



COMPLETELY up to date, the new revision of the American Standard for Terminal Markings for Electric Apparatus, C6.1-1956, presents rules for identifying terminals of all types of electric apparatus. Every section of this new edition was studied by committees of engineers who deal daily with the particular branch of equipment under consideration.

The section on transformers, as given originally in the earlier, 1944 edition, was completely reworked for inclusion in the new edition. It now sets up a single rule for each case so the installing electrician can identify the windings of a new transformer by the terminal markings. This permits him to memorize the identifications without having to study the accompanying diagrams shipped with the transformer. A quick glance at the diagram received will tell him if the markings are standard. He can then proceed with full confidence in what he is doing. As a result, he can work faster and do a more reliable job in familiar surroundings.

The new standard also provides a better system for identifying the different windings, and the symbols employed in the diagrams have been changed to agree with the latest standards for symbols and other identifications.

The section on single-phase motors represents the most complete revision of any section in the standard. This section is particularly important because, in the case of motors and their control, the motor engineers and the control engineers are usually different people. In some cases one company may supply both the motor and the control; but often they are supplied by different companies. The Control Engineer has a right to assume that the marking of the connections on the motor conforms to the American Standard, and that he can, therefore, proceed with his design without having to wait for a diagram from the motor supplier. If there is trouble due to incorrect connections between motor and control when the equipment is started, the one who did not adhere to the American Standard is on unsound ground in the argument.

In preparing the new edition, there was considerable work done on all departments, in addition to transformers and motors. The section for direct-current apparatus is one, however, that shows little change. Actually a great many changes were offered for this section and were considered carefully. In fact, a completely new set of diagrams was drawn up. After all this work had been done, however, it was decided that the proposed changes did not improve the clarity of the information already in the standard. Therefore, the proposals were finally rejected and the section was allowed to stand as it was with little change.

The 1956 standard provides rules for identifying terminals for generators, a-c and d-c; motors—capacitor, multi-speed, and other varieties; transformers—power and distribution; feeder voltage regulators; industrial control apparatus; instrument transformers; current-limiting reactors; constant-current transformers of the moving type; and electric water heaters.

American Standard C6.1-1956 is strictly for industry. There are other American Standards that cover the terminal connections of home appliances which affect each of us very intimately; for example, there is the common extension plug and socket (American Standard C73-1941). In the United States, as we all know, we have a common and accepted standard plug on all our household appliances. We naturally expect each new appliance to be equipped with the standard plug that can be inserted in the standard sockets we already have at home. We take it for granted that this is the way it should be. We are apt to overlook and forget the work done by the standardizing bodies that has made it possible for us to have this common plug.

On the other hand, a television repairman, writing in the January, 1955, issue of *Radio and Television News*, reports that in England there is a considerable variety of plugs and outlets with which Englishmen must contend in their homes. The absence of effective standardization of this simple item causes great inconvenience to individuals and to the trade.

American Standard C6.1-1956 on terminal markings prevents this type of confusion in industry, as American Standard C73-1941, attachment plugs and receptacles, and C73a-1953, grounding-type attachment plug caps and receptacles, prevent it in American homes.

Standards Aid in ***Ultrasonic Therapy***

AFTER much initial controversy, ultrasonic therapy has finally become a widely used medical tool. We shall not list here the various clinical areas and conditions in which the use of ultrasound is now considered both proper and beneficial by the consensus of medical authorities. Such eminent bodies as the American Medical Association's Council of Physical Medicine and Rehabilitation or the Mayo Clinic have contributed to define its advantages and limitations. Much valuable information has also become available from foreign sources, notably from workers in France, Germany, and Italy.

The proper perspective for the evaluation of ultrasonic therapy has been formulated by Dr J. Bierman, a well known New York physician, associated with Columbia University. In his text book, *Physical Medicine in General Practice,* he states:

"Some writers have stressed the dangers of this energy when applied to animal tissues. The same may be said of most of our valued therapeutic agents. X-ray and radium radiations, visible and infrared radiations, as well as high frequency and unidirectional currents, all may produce destructive changes. The important question is not whether an agency can do harm but whether, within a reasonably wide range of dosage, it can do good without producing damage. The chief consideration is dosage. In ultrasound, this includes not only the total wattage delivered by the apparatus but the wattage per square centimeter as well as the length of application to any one area in minutes."

The importance of dosage, i.e. the amount of total energy administered to the patient's body and its local distribution, immediately bring to a focus the need for measurements and calibrations. As long as the use of ultrasound was confined to laboratory demonstrations of its physiological or destructive effects on animal tissues, the determination of dosage was mainly of scientific concern. However, with the advent of a new and growing commercial activity in the production and sale of ultrasonic therapeutic equipment for general medical use, a number of serious questions have arisen.

Many of the potential users of this equipment have had little or no experience with either the acoustical terminology used in describing ultrasonic phenomena or the measurement techniques required for the determination of the ultrasonic field variables. This has also been true in the case of some of the manufacturers who have been eager to exploit a new market in medical electronics. To be sure, some industrial companies, both in the United States and abroad, have made extremely valuable contributions in staking out the applications and limitations of ultrasonics in medicine. Much biological and clinical research has been sponsored in the past by the more responsible part of industry, and valuable educational information, including original publications, statistics, and moving pictures, has been offered to the public.

Notwithstanding these commendable efforts, confusion has been created by conflicting claims of both medical users and commercial advertisers. A good part of this confusion has been due to the fact that the possibility of using ultra-audible soundwaves for therapeutic purposes was first reported in the European literature during the years immediately following World War II. A critical appraisal of these reports, some of which were affected by the wave of enthusiasm which usually accompanies new medical discoveries, was extremely difficult. Obviously, some guidance, both medical and technical, was required to protect the public from the consequences of indiscriminate use of a little known and potentially dangerous physical agent.

Slowly, it became apparent that there is an optimum range of frequencies and sound intensities to be used in ultrasonic therapy. Some European ultrasonic equipment became available on the American market for exploratory studies. But there was no standard by which the performance of such equipment, whether imported or newly manufactured in the United States, could be judged. There was not even a common basis of terminology by which the results reported in a rising number of medical publications could be compared.

The need for clarifying action was first realized by the U.S. Food and Drug Administration. The Administration appealed to the Acoustical Society of America for help and established its own calibration facilities. Sectional Committee Z24 on Acoustics, Vibration and Mechanical Shock, sponsored by the Acoustical Society of America, undertook the preparation of a standard to establish whatever terminology and calibration procedures might be required for proper labeling of ultrasonic therapy equipment. A writing group was created by the committee in November 1953, with a member-

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Mr Hueter is with the Acoustics Laboratory of the Massachusetts Institute of Technology. He and Dr David E. Goldman, Navy Medical Research Institute, Bethesda, Maryland, were co-chairmen of Writing Group Z24W21 that prepared the Specification for Ultrasonic Therapeutic Equipment for consideration by Sectional Committee Z24.

Copies of American Standard Z24.18-1956 are available at 75 cents each.

ship representing acoustics, medicine, and the two bodies directly concerned with the welfare of the public—the Food and Drug Administration and the American Medical Association. Later, the Electro-medical Manufacturers Association was invited to participate in the discussions.

As a starting point, the writing group had available a document which had been published by the Physikalisch Technische Bundesantalt, the standardizing agency of the Federal Republic of Western Germany. American Standard Specification for Ultrasonic Therapeutic Equipment, Z24.18-1956, which resulted from this work, includes terminology, safety and control, tolerances, calibration procedure, and labeling. In several ways it is more complete and also more strict than the German standard. However, both are based on the same calibration principles, and employ the same basic definitions. This will facilitate future efforts toward international standardization. In fact, the French have meanwhile produced a similar document, and a common international standard may soon be found.

Even while the writing group was still at work, many of the American manufacturers showed an active interest in the project. They asked for advice in setting up their own calibration facilities and improved the labeling of their equipment. Today, with proper guidance from an approved American Standard, the competition in a still expanding market has its own beneficial effect.

A patient *is being treated with ultrasound for lower back pain. In the background the radio-frequency generator (about 1 million cycles per second) is seen. Through a flexible cable the electrical oscillations are fed to a piezoelectric element housed in the applicator hand piece. The transducer element generates ultrasonic waves which are transmitted to the patient's body by means of a coupling agent, such as mineral oil.*

by T. F. HUETER

What Is Your Question?

Can you recommend standard torsion values to use on low-carbon steel screws in an assembly line production? Sizes are 0.060 to and including ½ inch diameter.

The most widely accepted table of recommended torque values for this type of screw is in a chart on the last page of the P. A. Sturtevant Company Torque Manual. The company explains that this table is based on tests conducted by various organizations and on the torque recommendations the company is using at the present time.

Other torque values are recommended in an article "Tension-Torsion Stress Values in Thread Fasteners," *Design News*, January 15, 1956, and also in an article "Machine Screws and Their Use," *Fasteners*, Vol. 6, No. 3.

Will the revision of American Standard Z14.1-1946 recognize the 9 x 12 basic size for drawings?

Although the proposed Section 1 on Size and Format of the revised standard recommends both 8½ x 11 and 9 x 12 no preference is specified for either. The proposed revision has been approved by Sectional Committee Y14, but has not yet been submitted to ASA for approval as American Standard.

How can I find out about the "inside diameter" function of steel pipe?

Two American Standards give this information — American Standard B36.10-1950, Wrought Steel and Iron Pipe, and B36.19-1952, Stainless Steel Pipe. Both standards list the outside diameter of the nominal size pipe and give wall thicknesses for various schedules.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

003.62 SIGNS, NOTATIONS, SYMBOLS

Poland

Symbols for thermodynamics PN N-01102
Symbols for mechanics PN N-01101

Portugal (IGPAI)

Names and symbols of usual metric units P-154

389 METEROLOGY, WEIGHTS AND MEASURES. STANDARDIZATION

Japan (JISC)

Symbols for Quantities Z 8202-54 *
Style Manual for Japanese Standards Z 8301-54 *
Preferred numbers Z 8601-54 *

USSR

Method of forming multiple and sub-multiple units and their symbols GOST 7633-55
Different systems of mechanical units GOST 7664-55

531 MECHANICS

Belgium (IBN)

System of basic practical units NBN 361

Germany (DNA)

Pressure: definitions and units DIN 1314

543 ANALYTICAL CHEMISTRY

Belgium (IBN)

Water analysis. Waste water. Suspended matter NBN 366

Czechoslovakia (CSN)

12 stds for different reagents CSN series 68 4 . . . /5 . . .

Japan (JISC)

543/545—Analytical Chemistry
3 stds for different reagents JIS K 1516/8

547 ORGANIC CHEMISTRY

Argentina (IRAM)

4 stds for test methods of aromatic hydrocarbons IRAM 1133/6

India (ISI)

Toluole, industrial, solvent grade IS 536-1955
Toluene, pure, nitration grade IS 537-1955
Benzene, pure, nitration grade IS 535-1955
Benzene, ordinary IS 534-1955
Carbon tetrachloride, technical IS 718-55

USSR

Melamine, technical GOST 7579-55
Cellulose, determination of weight of 1 m² GOST 7515-55
Cellulose and pulp: determination of impurities and metal particles content GOST 7517-55
Cellulose, determination of swelling in caustic soda solution GOST 7516-55
Ethylene oxide GOST 7568-55
Dibenzothiazole disulfide GOST 7087-54

614.84 FIRE BRIGADE

Argentina (IRAM)

Charge for fire extinguishers of soda acid and foam type IRAM 3519/20
Manual fire extinguishers IRAM 3517

Czechoslovakia (CSN)

Firemen's ax CSN 225152

Netherlands (HCNN)

Indicating plates for water sleeve valves and fire hydrants V 1184

Poland

8 stds for details of foam fire extinguishers PN M-51052/5, -058/62, -067

Roumania (CSS)

Wooden ladders for firemen STAS 4774-55
"Y" coupling for fire hose STAS 4699-55

United Kingdom (BSI)

Firemen's leather boots BS 2723: 1956

USSR

Fire hydrant GOST 7499-55
Foam mixing nozzles GOST 7183-54
Soda-acid hand extinguishers GOST 7276-54
Foam generators for fire extinguishers GOST 7182-54
Fire hose couplings, various types GOST 2217-54
Air foam hose nozzles with and without ejector GOST 7184-54

614.88 FIRST AID

Israel (SII)

Stretchers S.I. 179

Poland

Wheeled Stretcher PN Z-78138

615.47 SURGICAL AND MEDICAL INSTRUMENTS AND APPLIANCES

Germany (DNA)

Latex foam mattresses for hospitals DIN 13013
5 stds for special bolts, screws, etc. used by orthopedists DIN 58325/8, -30

Ireland (IIRS)

Identification of medical gas cylinders IS 61:1956

Japan (JISC)

Medical scissors, testing of JIS T 0202
Radiographic apparatus JIS T 1105
Dressing trays JIS T 3505
2 stds for dental drills JIS T 5202, -5207
2 stds for dental gypsum JIS T 6604/5

621.1 STEAM ENGINES, BOILERS

Germany (DNA)

Copper and copper alloy tubes for heat exchangers DIN 1785

Poland

Hydrostatic Test of ship's boilers PN W-34004
Steam engines: 5-language glossary of terms (English-French-Polish-German-Russian) PN M-35600

Roumania (CSS)

Inspection hole covers for boilers up to 32 kg/cm² pressure STAS 2263-55
Hot water boiler, horizontal type STAS 2584-55

Spain (IRATRA)

Different types of boiler furnaces according to the type of fuel used UNE 9006

USSR

Steam engines, auxiliary, for ships GOST 7135-54
Stationary boilers for central heating GOST 7252-54
Boilers' hand-hole closures GOST 7223-54

621.3 ELECTRICAL ENGINEERING

Argentina (IRAM)

Two poles connectors for electrical heating appliances IRAM 2064
Attachment plug for electrical heating appliances (two poles with grounding facilities, nominal voltage 220 V) IRAM 3517
Lead and lead oxides for accumulators IRAM 2117

Australia (SAA)

Approval and test spec for rubber insulated cables and flexible cords for electric power and lighting (for working voltages up to and including 11 kv) A.S. No. C. 116-1955Ap.
Approval and test spec for PVC-insulated cables and flexible cords for electric power and lighting A.S. No.C.147-1955Ap.

France (AFNOR)

Wooden poles for overhead lines NF C 67-100
Reinforced concrete poles for overhead lines NF C 67-200

Germany (DNA)

Different diagrams for connection of electrical measuring instruments DIN 43807
G-type fuses, 6 amp. 0.5 to 3 kv DIN 41681, B1.1
G-type fuses, E 16, 250 V DIN 41687/8
Electric hot plate element A 110 to 380 v DIN 44910, B1.1/2

India (ISI)

Electric irons IS 366-1955
Electric kettles for domestic use IS 367-1955
Electrical steel sheets IS 648-1955
Methods of testing electrical steel sheets IS 649-1955
AC whole-current electricity meters IS 722-1955 (Pts I & II)

Ireland (IIRS)

Tungsten filament general service electric lamps IS 25. 1956

Japan (JISC)

4 stds for electrical X-ray equipment JIS T 1101/3, 1108
Storage batteries JIS C 8704
Geiger-Muller counter tubes for B-rays JIS C 1901
2 stds for radiation meters JIS C 1605/6
4 stds (bound together) for Instrument transformers JIS C 1710/3
Electrolytic capacitor paper JIS C 2301
Dimensions of brushes for electric machines JIS C 2802
Tubular paper capacitors for export JIS C 6424
Export variable air capacitors for radio receiver JIS C 6428
Sockets for small sized vacuum tubes JIS C 7006
4 stds for fluorescent lamps JIS C 7601, -03, 8106, 8108
Lightning rod JIS A 4201
Reinforced concrete poles for electric railway JIS A 5311

Poland

23 stds (one booklet) for different parts of electrical railroads network PN E-92950/72
Standard dial graduation of electrical instruments PN E-02-200
Electrical copper & aluminum cable, paper insulated and lead sheathed PN E-90021
Magnetic Dynamo sheets PN E-04450
Insulated copper and aluminum wires PN E-04160
Brush connectors for electric machines PN E-80404
Graphical symbols used in radio technics PN E-01221
General rules concerning electric heating apparatus PN E-06200
Graphical symbols for relays PN E-01214
Insulated copper wire PN E-90016
Paper capacitors for internal combustion engines PN E-06350

Portugal (IGPAI)

Low-voltage installation material P-159

Roumania (CSS)

Straight insulator pins STAS 349-49
Edison thread for lamp sockets STAS 690-55
Electrical street-lighting globes STAS 803-55
Electric dry cells and batteries STAS 808/9-55
Domestic electric appliances: general rules STAS 2614-55
Receptacles and plugs for electric appliances STAS 2801-55
Steel connecting bolt for panel board, 200 amp. 500 v STAS 4816-55
Receptacle and plug up to 500 v, 25 amp STAS 3184-55
Switches up to 500 v, 25 amp STAS 3185-55
Concrete conduits for telecommunication lines STAS 4914-55
2 stds for three-phase oil transformers up to 35 kv, 1800 kva STAS 440-49, 1704-50
Small switchgear up to 500 v 25 amp STAS 2000-55
Transformers for arc welding STAS 2689-51
Electric cables, rubber-insulated, lead-sheathed for marine purposes STAS 4638/9 -54
Telephone cables, rubber-insulated, lead-sheathed for marine purposes STAS 4691-55

Spain (IRATRA)

Paper insulated cables for voltage up to 1000 v UNE 21023

Switzerland (SNV)

General rules concerning plug-receptacles for household and industrial use SNV 24501 a
Sketches showing different types of receptacles for voltages 50 v, 250 v, 380 v and 500 v SNV 24503 a
Two-pole, 6 amp, 250 v household plug-receptacle, type 16 SNV 24526 a
Two-pole, 10 amp, 380 v household plug-receptacle, type 3 SNV 24527
Two-pole, 10 amp, 380 v household grounding plug-receptacle types 18, 19 and 20 SNV 24259/31
Three-pole, 6 and 10 amp, 500 v industrial grounding plug-receptacles, types 41, 42, 141 and 142 SNV 24571/2 SNV 24586/7
Three-pole, 10 amp, 50 v industrial plug-receptacles, types 43, 44, 143 and 144 SNV 24573/4 SNV 24588/9

Union of South Africa (SABS)

Heat resisting cables for use in the internal wiring of electric appliances SABS 529-1956

USSR

Telephone cable terminal boxes GOST 7651-55
Telephone lines crossing ferrules GOST 7531-55
Autotransformers for household use GOST 7518-55
Convertors for dc arc welding GOST 7237-54
Electric arc furnaces GOST 7206-54
Three-phase transformers for electric arc foundry furnaces scale of standard power GOST 7207-54
Household electric bells for direct connection to ac line GOST 7220-54
Enclosed cartridge fuses up to 500 v ac GOST 7541-55
Brackets for overhead telecommunication lines GOST 7562-55
Bridges for dc resistance measurement GOST 7165-54
Current stabilizers GOST 7161/2 -54
Ceramic hermetically sealed capacitors GOST 7158/9 -54
Automatic electrical regulators, industrial type GOST 7191-54
Potentiometers GOST 7164-54
Automatic electric regulators GOST 7192-54
Fixed non-wire resistors, type MLT GOST 7113-54
Hermetically sealed paper and foil capacitors GOST 7112-54
Electronic tubes, General specifications GOST 7428-55
Mica capacitors, type KSO GOST 6119-54
Carbon Microphones GOST 7152-54
Switch boxes up to 500 v GOST 7145-54
Determination of electric wires resistance GOST 7229-54
Wires and cords for automatic telephone stations GOST 7218-54
Electric tea-pots and coffee-pots GOST 7400-55
X-ray apparatus GOST 7248-54
Insulator pins for overhead telecommunication lines GOST 7092-54
Screw base of incandescent lamps GOST 2746-55
Insulating tape, rubberized GOST 2162-55
Aluminum sleeves, hot pressed for connecting overhead lines GOST 2741-54
Compensators, synchronous, air-cooled, 5000 to 30,000 kva GOST 609-54
Fuses, screw-base type GOST 1138-55
Plastic receptacles and plugs for electronic tubes GOST 345-54
Switches and reversing switches GOST 7397-55
Thyratron tubes for general use GOST 7391-55
Galvanometers for dc GOST 7324-55
Graphical symbols for electrical wiring diagrams GOST 7621-55
Hand trouble lights for 220 v GOST 7110-54
High tension testing of cables, wires and cords GOST 2990-55
Capacitors, electrolic, type KE GOST 5561-54
Frequency meters GOST 7590-55
20 stds for different types of watertight entrance cable and wire bushings GOST 4838/44, 4846/52, 4854/8, 4860-55
Storage battery racks GOST 1226-55
High frequency ceramic capacitors up to 10 kv GOST 7160-54
Telephone apparatus of general use, testing GOST 7153-54
Galvanic cells and batteries GOST 3004-54
Telephone distribution branching cupboards GOST 109-55
Crossbars for overhead line poles GOST 7460-55
Microphones and loudspeakers GOST 7323-55
Receptacle and plug with two cylindrical prongs GOST 7396-55
Electric hot plates, household GOST 306-55
Copper sleeves for cable junction GOST 7388-55
Copper cable terminal lugs GOST 7386-55
Electric fans, household GOST 7402-55
Electric clocks GOST 7412-55
Power transformers, method of testing GOST 3484-55
Electric cord for household appliances GOST 7399-55
Electric cable terminal lugs, aluminum GOST 7387-55
Glass containers for storage batteries GOST 7342-55
Bicycle dynamos GOST 7398-55
Electric flat irons, household GOST 307-55
Standard cell GOST 1954-55
Cast iron terminal boxes for cables GOST 7764-55
Three-phase, asynchronous electric motors from 100 to 1000 kw GOST 7830-55
Various diagrams of socket connections of vacuum tubes GOST 7842-55
Electric non-wired resistors, standard nominal scale GOST 2825-55
High-tension wire clamps GOST 4261/4 -55
Control gear for high tension circuit breakers, ac GOST 689, 690 -55

Yugoslavia (JUS)

Telecommunication wires and cables: designation JUS N.C0.005
Power wire and conductors: designation JUS N.C0.006
Testing of P.V.C. insulated wires and cables JUS N.C0.030
10 stds for P.V.C. telecommunication and power wires & cables JUS series N.C2, -C3, -C4
9 stds for electric bulb bases and gages of screw thread JUS series N.L0, -L1
4 stds for automobile lamps bayonet base JUS N.L1.100, -105, -110, -120
Electric fence, battery operated JUS N.M5.021

621.64 DEVICES FOR CONVEYANCE AND STORAGE OF GASES AND LIQUIDS

Belgium (IBN)

Color code for the identification of fluids in pipes in land installations NBN 69
Concrete pipes, non-pressure NBN 376

Japan (JISC)

Sluice valves for water-works purposes JIS B 2062
Pipe flange for 69 kg/cm² JIS B 2217

Netherlands (HCNN)

Seamless copper tubes for water-conduits N 1200
Stop and tap cocks for water V 3120

Poland

5 stds for different types of metal drums PN M-79101/2, 79104, 79111/2
List of nominal pressures for steel and steel alloy pipes PN H-02650
Cast iron plug valves up to 10 kg/cm² nominal pressure PN M-74273
Bronze cocks for 10 kg/cm² nominal pressure PN M-74274

Roumania (CSS)

Flanges, cast iron and steel for pressures 25-40 kg/cm₂ and 64 - 100 kg/cm² STAS 1737/8 -55
Wedge valves for nominal pressure 2.5 and 4 kg/cm² STAS 2550/51
Wedge valves, cast steel, nominal pressure 40 and 64 kg/cm² STAS 2987/8 -52
Color code for identification of pipes STAS 4724-55
3 stds for forged steel flanges, up to 6 kg/cm² STAS 4789/91 -55
Wedge valves, cast iron STAS 1518-52
Flanges, cast iron and steel, nominal pressure 1 to 6 kg/cm² STAS 1734-50
Globe valves up to 40 kg/cm² STAS 2175-51
Flanges, rolled steel, welding, nominal pressure 6 kg/cm² STAS 4678-55
Flanges, cast steel, nominal pressure 16 kg/cm² STAS 4679-55
Flanges, rolled steel, screwing, oval, nominal pressure 6 kg/cm² STAS 4680-55

USSR

2 stds for rubberized suction and pressure hoses GOST 71-55, 85-55
Identification color code for piping GOST 4666-55
Steel gas pipes, common GOST 3262-55
Check valves, cast iron GOST 7519-55
2 stds for cocks: cast iron, bronze or brass GOST 2704, 2998
3 stds for cocks for nominal pressure up to 10 kg/cm² GOST 2422/3, 7520
3 stds for cocks for nominal pressure up to 6 kg/cm² GOST 6222/3, 2844

621.791 WELDING, SOLDERING, CUTTING

Japan (JISC)

Standard qualification procedure for welding technique JIS Z 3801
3 stds for gas cutting torch and parts JIS B 6802/3, -6805

Netherlands (HCNN)

7 stds for electric arc manual welding V 1062: parts 1 to 7

Spain (IRATRA)

Types of cables used in electric arc welding UNE 14012

USSR

Soldering iron, electric GOST 7219-54
Methods for X-ray examination of welds GOST 7512-55

Yugoslavia (JUS)

Welding: definitions & terminology JUS C.T3.001
Simplified weld symbols JUS C.T3.011
Quality testing of arc- and gas-welded joints JUS C.T3.051
Examination of performance qualification of arc- and gas welders JUS C.T3.061

621.82 BEARINGS, COUPLINGS, JOURNALS, ETC.

Czechoslovakia (CSN)

5 stds for different cross-sections of splined shafts CSN 014941/4, -49
6 stds for balls and rollers for bearings CSN 02 3679/80, -3685/6, -3692/3

Japan (JISC)

Tapered adapters for ball and roller bearings JIS B 1552/5
Inspection method for ball bearings JIS B 1546
Inspection method for thrust ball bearings JIS B 1543
Inspection of roller bearings JIS B 1544

Spain (IRATRA)

Ball bearings: outer rings with grove for locating snap rings, dimensions UNE 18042
Locating snap rings for ball bearings UNE 18043

USSR

Steel tubes for manufacturing bearings GOST 800-55
Steel balls for ball bearings GOST 3722-54
Self aligning bearings GOST 3635-54
Ball- and roller bearings, sizes; classes of fits GOST 3478, 3325
Roller bearings, taper GOST 333, 7260
Radial ball bearings, single row GOST 2893, 7242 -51
Roller bearings with short rollers GOST 7634-55

621.86/.87 HOISTING AND CONVEYING MACHINERY

Czechoslovakia (CSN)

17 stds for steel-belt and rubber-belt conveyors CSN series 26 3000...

Germany (DNA)

2 stds for hoist sheaves DIN 15061/2

Netherlands (HCNN)

Rules for designing lifts & escalators in buildings V 3040

Norway (NSF)

2 stds for loading pallets NS 815/6

Roumania (CSS)

Overhead travelling cranes STAS 4660-54

621.88 MEANS OF ATTACHMENT. FASTENINGS

Argentina (IRAM)

Rivet-steel flattened head. Dimensions IRAM 533

Belgium (IBN)

Light-alloy rivets under 10 mm diameter NBN 382.211

Czechoslovakia (CSN)

22 stds for wire nails, hooks and staples CSN 02 2800...
4 stds for T-slots and bolts CSN 02 1030, -1124, -1173, -1529
3 stds for round head rivets CSN 02 2350/1, -2360
6 stds for set- and adjusting-collars CSN 02 2910/2, -14, -30/1

France (AFNOR)

Headless set screws NF E 27-164
Split-head pivoted screw NF E 27-169
Cotter pins, round, split NF E 27-484
Method of inserting pins NF E 27-486

Germany (DNA)

Self-locking nuts DIN 985
3 stds for different types of rivets DIN 660/2

Italy (UNI)

4 stds for steel nails, staples, etc. UNI 3618/6
4 stds for spring stop rings UNI 3653/6
5 stds for different types lock washers UNI 3703/7
Steel bolts—classification, designing UNI 3740

Japan (JISC)

Round iron nail JIS A 5508
Hexagon socket head cap bolt and set screw (metric thread) JIS B 1164/5

Poland

Cylindrical pins PN M-85021
3 stds for set screws PN M-82314/6
Fine metric thread, series B PN M-02007
Straight pipe thread, inch system PN M-02030
Gages for inch pipe thread PN M-53303
Tolerances for metric fine thread PN M-02115
Tolerances for acme thread PN M-02117

Portugal (IGPAI)

Standard metric screw thread P-152
Standard Whitworth screw thread P-153
Different types of screws, nomenclature P-155

Roumania (CSS)

Set screws, metric STAS 4771-55
Hexagon head bolts, metric STAS 4845-55
Headless set screw with cone-point STAS 4847-55
Taper studs with one end threaded STAS 4851-55
Square head set screw with cone point STAS 4884-55

USSR

Eye-bolts GOST 3033-55
Taper plugs, threaded GOST 3112-54
S.A.E. type lock washer GOST 7529-55
Grommets GOST 7479-55

Yugoslavia (JUS)

Flat and wedge-shaped split pins JUS M.B2.301
Tee-bolts JUSM.B1.093
Woodruff keys JUS M.C2.050
Tee-slot JUS M.G0.060

621.9 MACHINE TOOLS. TOOLS

Czechoslovakia (CSN)

Turret lathes, accuracy of CSN 20 0304
28 stds for twist drills CSN series 22 1100...

Germany (DNA)

Three-jaw drill chucks DIN 6349

Japan (JISC)

2 stds for pliers JIS B 4614, 4631
Drill chuck for machine tool JIS B 6001
Die stock JIS B 4645
Pipe cutters JIS B 4646
Files JIS B 4705/6
Shell milling cutters JIS B 4214/5
Arbor for shell and end milling cutters JIS B 4216
10 different types of milling cutters (one pamphlet) JIS B 4221/30
2 stds for screw hole reamers JIS B 4233, -4235

NEWS BRIEFS.....

• Six new spectrographic standard samples of zinc-base alloys are now available from the National Bureau of Standards. The new standards are designed for calibrating and checking spectrochemical methods in the analysis of two important zinc-base die-casting alloys (ASTM designations AG40A and AC41A).

For each of the two alloys, three standards have been issued to provide the necessary composition ranges for the elements covered by specifications; namely, aluminum, copper, magnesium, iron, lead, cadmium, and tin. The standards also contain useful concentration ranges for chromium, manganese, nickel, and silicon.

• The Radio Propagation Engineering Division of the National Bureau of Standards Boulder Laboratories has been reorganized with the original two research sections divided into seven new units.

The reorganization is designed to facilitate the increased research that has grown out of the recent development and widespread use of tropospheric scatter propagation, radio noise, modulation, and navigation techniques. Two new Assistant Division Chiefs have been named and eight other scientists given new assignments in the reorganization. Kenneth Norton continues as Chief of the Division.

J. W. Herbstreit and Kenneth O. Hornberg are the new Assistant Division Chiefs. Mr Herbstreit, who formerly was in charge of all tropospheric work, will now supervise research and development. Mr Hornberg, the project leader of the Cheyenne Mountain tropospheric radio propagation experiments, will be responsible for technical administration of the Division's engineering and logistical work.

Dr Moody C. Thompson has been appointed as a consultant to do original research on microwave refractometers and special instruments relating to tropospheric effects on radio waves propagation. Dr James R. Wait, a theoretical physicist, will continue to serve in his capacity as a consultant.

• The Technical Publishing Society has named Daniel Drotning as chairman of its Committee on Standards. Mr Drotning is Executive Vice-President of Economy Blueprint and Supply Company and General Manager of the Economy Lithograph Company.

The Society has subcommittees on technical manuals, reports, and printing and production. Robert Fay, Convair-Astronautics, San Diego, California, is chairman of the technical manual standardization committee. Donald Byrn, Chief, Printing and Publications, 11th Naval District, San Diego, heads the work on printing and production.

Standardization of electronic symbols and establishment of standard binding requirements are two priority projects being considered by the Standardization Committee.

• A tentative draft of a proposed standard on National Miniature Screw Threads has been prepared by ASA Sectional Committee B1. The American Society of Mechanical Engineers, administrative sponsor, announces that copies can be obtained free of charge by addressing Frank Philippbar, Standards Department, The American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y. The draft is identified as ASA B1.4.

• The Technical Committee for Standardization of Essential Oils, TC54 of the International Organization for Standardization, approved a number of draft recommendations at its meeting September 19-26, at Oporto, Portugal.

Among subjects studied and on which resolutions were taken were: a general guide for packing essential oils; general guide for labeling and marking packages of essential oils; determination of density and relative density; determination of freezing point; determination of the solubility of essential oils in ethanol; determination of the acid value of essential oils; determination of the ester value; estimation of free alcohol content by determination of the ester value of the essential oils after acetylation; determination of the refractive index; determination of the evaporation residue; preparation of the test sample applicable to test methods.

The next meeting of the committee will be held in the spring of 1958 in Paris.

The Portuguese standards association holds the secretariat for the committee.

• On recommendation of ASTM Committee B-7 on Light Metals and Alloys, Cast and Wrought, the American Standards Association has voted to request participating status in the international project, ISO/TC 79, Light Metals and Their Alloys. ASTM Committee B-7 has been designated the American Group to advise ASA in regard to the work of TC79.

• At its meeting October 25, the Mining Standards Board gave serious consideration to United States participation in the international project, ISO/TC82 on Mining. This project had been initiated by the International Organization for Standardization in 1955 with the American Standards Association as an observer. Scope of ISO/TC82

includes surveying, mine supports, mining equipment, mine safety equipment and installations, and flameproof material.

After thorough discussion, the Mining Standards Board put itself on record as being in favor of USA participation in the international work; however, it authorized the secretary to take a letter canvass on the question.

Plans are being made to hold the first meeting of ISO/TC82 in the spring of 1957.

• Dr Paul J. Flory, Professor of Chemistry and Acting Chairman of the Department of Chemistry, has been chosen to head the Mellon Institute's investigational activities as Executive Director of Research. An announcement by General Matthew B. Ridgway, chairman of the Board of Trustees and Chief Administrative Officer of the Institute, indicates that Dr Flory will join the organization for a day a week during this fall and winter, half time in February, and full time in the summer of 1957.

Dr Flory has pioneered research on the constitution and properties of substances comprised of giant molecules, such as rubbers, plastics, fibers, films, and proteins, and is author of 106 papers in scientific journals, as well as a 670-page book, *Principles of Polymer Chemistry*. Twenty-two patents have been issued to him, including instances of co-invention.

For his research achievements Dr Flory has received the Joseph Sullivant Medal of the Ohio State University; the Leo Hendrik Baekeland Award of the American Chemical Society; and the Colwyn Medal of the Institution of the Rubber Industry (Great Britain).

The Mellon Institute was sponsor, with the American Standards Association, of the new book *National Standards in a Modern Economy*, edited by Dickson Reck.

• Vincent S. Ward, of Binghamton, N. Y. has been named Manager of the Standards Engineering Department in IBM's Product Development Laboratory in Endicott.

Officers of the new Hamilton-Toronto Section, Standards Engineers Society. (Left to right) G. Wells; Michael McKerrow; Elbert Price; Walter Winslow.

Mr Ward, a graduate of Rensselaer Polytechnic Institute, was employed by IBM in 1949 as a designer in the Standards Department. In 1952 he became an Associate Engineer, and the following year was promoted to Project Engineer, Standards Engineering.

He is a member of the Standards Engineers Society and of the American Standards Association Sectional Committee on Drawings and Drafting Practice.

• The second Canadian section of the Standards Engineers Society was organized September 27 to serve the Hamilton-Toronto district. Members represent the electrical-electronic, aircraft, and allied industries. The Hydro-Electric Power Commission and the Canadian Standards Association, Approvals Division, were also represented at the first meeting of the new section.

Executive officers are M. J. McKerrow, chairman and section director, Electronics Division, Canadian Westinghouse Company, Limited, Hamilton; G. Wells, vice-chairman, Canadian General Electric Company, Limited, Toronto; W. T. Winslow, secretary-treasurer, Orenda Engines Limited, Toronto; E. G. Price, executive officer, Hydro-Electric Power Commission of Ontario, Toronto.

• The British Standards Institution reports progress in its committee work on standards for industrial use of nuclear energy.

The first meeting of a committee on safety standards was held in October of this year; a new standard for isotope holders will be published soon; and another standard on barytes as a concrete and plaster aggregate is nearing completion.

The committee on safety standards includes representatives of the Society of Non-destructive Examination, British Welding Research Association, Institution of Mechanical Engineers, insurance companies, oil firms, and manufacturers of radiographic equipment.

BSI expects that the committee's general approach to the problem will be the specification of "safe distances" from the source of X- and gamma rays, for the purpose of erecting warning notices, and to lay down minimum shielding required. This will ensure that a radiation dose received by a worker never exceeds the medically permissible maximum.

The new standard for isotope holders, entitled Gamma-ray source capsules for radiography (BS 2783), has been developed in close collaboration with the Atomic Energy Research Establishment and the Radio-Chemical Center.

It deals with two designs of cylindrical capsule required in industrial radiography for the convenient holding of radioisotopes. Activated material such as caesium or radon, in the form of a small cylinder, is placed within the inch-long capsule, the open end of which is sealed after the insertion of the radioactive source. The "tongue" of the capsule provides a convenient means of handling at safe distances, and gives a convenient surface on which an identification symbol may be stamped.

British Standard 2783 provides fully dimensional diagrams illustrating the two types of capsule; notes are included as to suitable alloys for their manufacture.

The standard on barytes, which is now approaching its final stages, is concerned with barytes as a concrete and plaster aggregate (where protection is needed in a limited space).

Other work in progress includes a study of monitoring techniques and film holders.

Leon Podolsky . . .

• Leon Podolsky was awarded the gold plaque of the Radio-Electronics-Television Manufacturers Association and the Institute of Radio Engineers at their joint Radio Fall Meeting October 16. He was honored for his "outstanding contributions to international standardization in the field of components for electronic devices."

Mr Podolsky is technical assistant to the president of the Sprague Electric Company. Since 1952 he has been the technical advisor and chief delegate of the United States on electronic components at the meetings of the International Electrotechnical Commission. His report on this year's meetings of IEC Technical Committee 40 was published in the September issue of THE MAGAZINE OF STANDARDS, page 272. In connection with this assignment he has been responsible for organizing within the electronics industry the committees and program to present the United States viewpoint in the international work in the electronics field.

Mr Podolsky is chairman of the International Standards Committee of the Radio-Electronics-Television Manufacturers Association and also chairman of ASA Sectional Committee C83 on Electronic Components.

He was recently elected to the honorary grade of Fellow in the American Institute of Electrical Engineers in recognition of his contributions to the industry.

• Investigations and tests conducted by the Road Research Laboratory of the British Department of Scientific and Industrial Research formed the basis for stricter safety requirements for motor cyclists' protective helmets issued by the British Standards Institution recently. Regular users of British Standard helmets include police motor cyclists, Automobile Association and Royal Automobile Club scouts, and post-office messengers, BSI reports.

. . . receives award

The revised safety standard (British Standard 2001:1956) appears at a time when a new Road Traffic Act makes it a criminal offense to sell a motor cyclist's protective helmet of a type not approved by the Ministry of Transport. The order bringing the appropriate part of the Act into force and the regulations prescribing or authorizing types of helmet had not yet been issued at the time the announcement received by the American Standards Association from BSI was prepared.

Helmets described as complying with the standard carry the BSI "Kite-mark" of approval. Authorization to use the mark is granted by the British Standards Institution following a strict routine of testing, examination, and inspection.

The principal changes in the revised edition of the standard have to do with testing. The most important of the revised tests is that for measuring shock absorption or impact resistance, BSI points out. The test requirements are based on a detailed study of the mechanics of head protection and on extensive research into the effects of accidents. Stricter precautions are also taken to ensure that helmets will stand up to the effects of weather, particularly extremes of heat and cold. Another new test checks resistance to penetration. Also, a new test to measure the flexibility of peaks is included, since peaks which are too rigid, or which, being too flexible, tend to "flutter" at high speeds, are dangerous.

Among the organizations which participated in revising the standard were: The Auto-Cycle Union, the British Medical Association, the Road Research Laboratory, the Ministry of Supply and the Ministry of Transport and Civil Aviation, the Automobile Association, and the Royal Automobile Club, and representatives of manufacturers of helmets and materials.

BOOKS

The Five Fundamentals of Modular Drafting. *Prepared by William Demarest, Jr, Modular Coordination Office, American Institute of Architects, 1735 New York Avenue, N.W., Washington 6, D.C. No charge.*

"Riding a bike looks tricky only to those who haven't learned. This is the case, too, with Modular drafting; the only way to learn is just to start doing it," says William Demarest, in this 16-page booklet. The booklet explains and illustrates the essentials of modular dimensionsing, and emphasizes how few and how simple are the changes from traditional drawing methods. It was prepared as an aid for architects, structural engineers, and draftsmen who are beginning to use Modular Measure. When the five fundamentals described here have been mastered, the economies it offers in drafting short cuts and in clarity of presentation become apparent.

Fire and Accident Loss Control Index and Directory. 1956. 1,000 *pp. Loss Control Associates, 629 Oakmont Drive, Plattsmouth, Nebraska, $48.50. Supplemental service, provided semi-annually, $17.50 per year.*

The first index and directory of its kind, this publication in looseleaf form is issued to help those concerned with control of fire and accidents to find information on any phase of this problem. The book is compiled in two parts, published together in one document—the Index and Guide, and the Directory.

The Index and Guide is an alphabetical list of subjects and subtopics contained in all known nationally recognized codes, standards, and references, useful to those concerned with fire and accident loss control. These include American Standards, as well as publications of the National Fire Protection Association, the National Safety Council, and many other associations and technical societies. Listed under each subject is a guide giving specific directions as to where the user may find information concerning that particular subject. Approximately 10,000 subjects are included.

The Directory lists the publications referenced in the Index, giving the publisher, price, and address where copies can be obtained. Five pages are devoted to a list of American Safety Standards.

A Supplemental Service is also available, through which the Index and Directory will be kept up to date on a semi-annual basis.

Engineering Manual for Control of In-Plant Environment in Foundries. 1956. *First edition. American Foundrymen's Society, Incorporated, Des Plaines, Illinois. 8½ x 11. 152 pp. 221 figures. 25 tables. $7.75 to nonmembers.*

Prepared as a project in the Society's Safety, Hygiene, and Air Pollution Control Program, this book contains general background information and also specific design data for making foundries a better place to work. Materials and processes that influence health, ventilation, and comfort are discussed. Ventilating systems are described generally. Specific data are furnished for the design of exhaust hoods and exhaust systems. Maintenance and testing required to keep the ventilation and dust collecting system in effective operation are described and recommendations for inspection schedules and procedures are given.

The Manual was developed through the cooperation of the foundry industry, equipment suppliers, and insurance carriers, the Society announces. John G. Liskow, chief engineer, Dust Control Division, American Air Filter Company, Inc, Louisville 8, Ky., was chairman of the Dust Control and Ventilation Committee that developed the manual.

Electronic Engineering. *Samuel Seely. 1956. McGraw-Hill Electrical and Electronic Engineering Series. McGraw-Hill Book Company, Inc, 330 W. 42nd Street, New York 36, N. Y. 525 pp. $8.00.*

A detailed discussion of a large variety of electronic circuits, important in such diverse fields as radar, television, electronic control and instrumentation, and computers, is given in this book. Up to date, it includes a chapter on solid state theory, and one on transistors as circuit elements, as well as most of the current electronic engineering problems. Professor Seely is chairman of the Department of Electrical Engineering, Syracuse University.

Engineering Drawing and Geometry. *Randolph P. Hoelscher and Clifford H. Springer. 1956. John Wiley & Sons, 440 Fourth Avenue, New York 16, N. Y. 520 pp. $8.00.*

The chairman and vice-chairman of ASA Sectional Committee Y14, Drawings and Drafting Practice, have here presented a text that emphasizes the application of theory to practical problems. The book covers lettering, use and care of instruments, geometrical constructions, geometric projections, sketching, orthographic projection, sectional views, dimensioning, fasteners, shop terms and processes, drawings for interchangeable assembly, auxiliary projections, geometry of engineering drawing, and intersections and developments. Other chapters deal with axonometric and oblique projection, perspective, charts and diagrams, map and architectural drawing, structural and pipe drawing, machine and tool drawing, welding

drawing, reproduction of drawings, and patent office drawings.

Mr Hoelscher is professor and head of the department of general engineering at the University of Illinois, and chairman of Committee Y14. Mr Springer, a professor in the same department, is vice-chairman of the committee.

Glossary of Terms Relating to Rubber and Rubber-like Materials. *Special Technical Publication STP* 184. *American Society for Testing Materials,* 1916 *Race Street, Philadelphia* 3, *Pa.* 6 *x* 9. 121 *pp. Heavy paper cover.* $3.00.

More than 2,000 terms are included, in addition to an Appendix containing trade names of apparatus and chemicals (whose compositions have been published) related to the field of rubber. The book was compiled under the auspices of ASTM Committee D-11 on Rubber and Rubber-like Materials.

U. S. Directory of Modular Building Materials. *First edition.* 1955. *American Institute of Architects,* 1735 *New York Avenue, N.W., Washington* 6, *D. C.* $1.00.

Prepared by former Modular Coordinator William Demarest, this is a geographic listing of manufacturers of Modular masonry, both concrete block and clay products, together with names, grouped by product, of other manufacturers who have reported that they produce Modular units. These products include, for example, flue lining, glass block, windows, toilet and shower stalls, and miscellaneous products such as metal fittings, prefabricated metal fireplaces, unit ventilators, metal partitions, and others.

Industrial Research Laboratories of the United States. 1956. *Tenth edition. National Academy of Sciences, National Research Council,* 2101 *Constitution Avenue, Washington* 25, *D. C.* 560 *pp. Cloth.* $10.00.

Information on 4,834 laboratories of 4,060 companies is included in this edition. Entries show names and locations of laboratories, principal research executives, number of professional, technical, and administrative employees, and kinds of research in which they are engaged. As an aid in finding individual laboratories or subsidiaries of large companies, an effort has been made to report the entire structure of an organization under its parent company's name with extensive cross-references to component units, subsidiaries, and laboratories.

An index of research activities includes over 1,000 major subject headings. An index of the geographical location of the laboratories is also included.

Where Is Where. *By Ambrose Ryder.* 1956. *Carmel Company, Carmel, N. Y.* $1.00.

Mr Ryder proposes a standard system of east-north index numbers which he believes will do for our present uncoordinated method of house numbering what standard zones have done for time.

Mr Ryder suggests that his proposed system of east-north location indexes, if imprinted on existing world maps, would make it almost impossible for anyone to get lost either in the city or in the country. The system is based on a modified version of the standardized set of longitude and latitude coordinates applied to the surface of the earth. Mr Ryder proposes a system of hyphenated numbers that would make it possible to pinpoint even the most remote spot. He shows how the proposed system could be applied, and proposes certain procedures for carrying it out.

AMERICAN STANDARDS UNDER WAY

Status as of November 2, 1956

BUILDING AND CONSTRUCTION

American Standard Published

Steel for Bridges and Building, Specifications for, ASTM A 7-55T; ASA G24.1-1956 $0.30
Sponsor: American Society for Testing Materials

American Standards Approved

Fire Tests of Building Construction and Materials, Methods of, ASTM E 119-55; NFPA 251; ASA A2.1-1956 (Revision of ASTM E 119-41; ASA A2.1-1942)

Fire Tests of Door Assemblies, Methods of, ASTM E 152-55T; NFPA 252; ASA A2.2-1956 (Revision of ASTM E 152-41; ASA A2.2-1942)

Test for Combustible Properties of Treated Wood by the Fire Tube Test Method, Method of, ASTM E 69-50; NFPA 253; ASA A2.3-1956

Test for Combustible Properties of Treated Wood by the Crib Test Method, Method of, ASTM E 160-50; NFPA 254; ASA A2.4-1956

Sponsors: American Society for Testing Materials; National Bureau of Standards; National Fire Protection Association.

In Standards Board

Gypsum and Gypsum Products, Methods of Testing (Revision of ASTM C 26-54; ASA A70.1-1956)
Sponsor: American Society for Testing Materials

Concrete Masonry Units, Methods of Sampling and Testing (Revision of ASTM C 140-55; ASA A84.1-1956)
Sponsor: American Society for Testing Materials

Legend

Standards Council—Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

Standards Board—Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Asphalt Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 226-56; ASA A109.2 (Revision of ASTM D 226-47; ASA A109.2-1955)

Coal-Tar Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 227-56; ASA A109.3 (Revision of ASTM D 227-47; ASA A109.3-1955)

Asphalt-Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 25-56; ASA A109.4 (Revision of ASTM D 250-47; ASA A109.4-1955)

Sponsor: American Society for Testing Materials

Standard Submitted

Basis for the Coordination of Dimensions of Building Materials and Equipment, ASA A62.1 (Revision of ASA A62.1-1945)

Sponsors: The Producers' Council; The American Institute of Architects; National Association of Home Builders

Reaffirmation Requested

Basis for the Coordination of Masonry, ASA A62.2-1945

Sponsors: The Producers' Council; the American Institute of Architects; National Association of Home Builders

CONSUMER GOODS

American Standards Published

Food-Storage Volume and Shelf Area of Automatic Household Refrigerators, Method of Computing, NEMA-HRF 1-1953; ASA B38.1-1955 (Revision of ASA B38.1-1944) $0.35

Household Electric Refrigerators (Mechanically Operated), Test Procedures for, NEMA HRF 2-1955; ASA B38.2-1956 (Revision of ASA B38.2-1944) $0.75

Sponsors: American Society of Refrigerating Engineers; U. S. Department of Agriculture, Home Economics Research Branch

In Standards Board

Soda Ash, Specifications for (Revision of ASTM D 458-39; ASA K60.11-1948)

Trisodium Phosphate, Specifications for (Revision of ASTM D 538-44; ASA K60.12-1948)

Sodium Metasilicate, Specifications for (Revision of ASTM D 537-41; ASA K60.18-1948)

Methods of Sampling and Chemical Analysis of Alkaline Detergents (Revision of ASTM D 501-54; ASA K60.21-1954)

Sponsor: American Society for Testing Materials

DRAWINGS & SYMBOLS

Reaffirmation Being Considered

Graphical Symbols for Heat-Power Apparatus, ASA Z32.2.6-1950

Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

ELECTRIC AND ELECTRONIC

American Standards Published

National Electrical Code, NFPA No. 70; ASA C1-1956 (Revision of C1-1953) $1.00

Sponsor: National Fire Protection Association

Hard-Drawn Copper Alloy Wires for Electrical Conductors, Specifications for, ASTM B 105-55; ASA C7.10-1956 $0.30

Sponsor: American Society for Testing Materials

American Standards Approved

Automatic Station Control, Supervisory, and Telemetering Equipments, C37.2-1956 (Revision of C37.2-1945)

Schedules of Preferred Ratings for Alternating and Direct Current Low Voltage Air Circuit Breakers, C37.16-1956

Preferred Pick-up Calibrations and Trip Delay Settings for Alternating Current Low Voltage Air Circuit Breakers, C37.17-1956

Sponsor: Electrical Standards Board

Automatic Null-Balancing Electrical Measuring Instruments, Specifications for, C39.4-1956

Sponsor: Electrical Standards Board

Definitions of Electrical Terms, ASA C42-

Group 20, Switchgear, C42.20-1956

Group 25, Control Equipment, C42.25-1956

Group 40, Transportation, C42.40-1956

Group 41, Transportation—Air, C42.-41-1956

Group 42, Transportation — Land, C42.42-1956

Group 43, Transportation — Marine, C42.43-1956

Group 50, Electric Welding and Cutting, C42.50-1956

Group 55, Illuminating Engineering, C42.55-1956

Group 60, Electrochemistry and Electrometallurgy, C42.60-1956

Group 70, Electron Devices, C42.70-1956

Group 85, Mining, C42.85-1956

Sponsor: American Institute of Electrical Engineers

Terminology and Test Code for Current-Limiting Reactors, Requirements for, C57.16-1956 (Revision of C57.16-1948, and parts of C57.10-1953 and C57.11-1953)

Sponsor: Electrical Standards Board

Electron Tube Bases, Caps, and Terminals, ASA C60.1-1956 (Revision of RETMA ET-103-B; NEMA 500-B; ASA C60.1-1952)

Dimensional Characteristics of Electron Tubes, ASA C60.2-1956 (Revision of RETMA ET-105-A; NEMA 502-B; ASA C60.2-1953)

Gages for Electron Tube Bases, ASA C60.7-1956 (Revision of RETMA ET-106-A; NEMA 503-A; ASA C60.7-1952)

Sponsor: Joint Electron Tube Engineering Council

Dimensional and Electrical Characteristics of 40-Watt T-12 Pre-heat Start Fluorescent Lamp, ASA C78.408-1956 (Revision of ASA C78.408-1951)

Dimensional and Electrical Characteristics of 72 Inch T-12 Rapid Start (Mogul Bipin) Fluorescent Lamp, C78.701-1956

Sponsor: Electrical Standards Board

Fluorescent Lamp Ballasts, Specifications for, C82.1-1956

Sponsor: Electrical Standards Board

In Board of Review

Measurement of Pulse Quantities, Methods of, 55 IRE 15.S1; C16.28

Sponsor: Institute of Radio Engineers

Nomenclature and Dimensions for Panel Mounting Racks, Panels, and Associated Equipment, RETMA SE-102; ASA C83.9-

Rectangular Waveguides, Requirements for, RETMA TR-108-A; ASA C83.10-

Metal-Encased Fixed Paper Dielectric Capacitors for D-C Application, Requirements for, RETMA TR-113-A; ASA C83.11-

Cable Connectors for Audio Facilities for Radio Broadcasting, Requirements for, RETMA TR-118; ASA C83.12-

Wire-Wound Power-Type Rheostats, Requirements for, RETMA TR-133; ASA C83.13-

Rigid Coaxial Transmission Lines—50 Ohms, Requirements for, RETMA TR-134; ASA C83.14-

Electrolytic Capacitors (For Use Primarily in Transmitters and Electronic Instruments), Requirements for, RETMA TR-140; ASA C83.15-

Sponsor: Radio-Electronics-Television Manufacturers Association

In Standards Board

Safety for Rubber-Covered Wires and Cables, UL April 1956; ASA C33.6

Sponsor: Underwriters' Laboratories

GAS BURNING APPLIANCES

American Standard Approved

Domestic Gas Ranges, Approval Requirements for, Z21.1-1956, Volume I, Free-Standing Units; Volume II, Built-In Domestic Cooking Units

Sponsor: American Gas Association

MATERIALS AND TESTING

American Standards Published

Electrodeposited Coatings of Zinc on Steel, Specifications for, ASTM A 164-55; ASA G53.1-1956 $0.30

Requirements for electroplated zinc coatings on steel articles that are required to withstand corrosion. Types GS, LS and RS are covered.

Chromium Plating on Steel for Engineering Use, Recommended Practice for, ASTM B 177-55; ASA G53.6-1956 $0.30

Requirements for the base steel and description of cleaning and etching methods and of solutions for electrodeposition of chromium on steel for engineering use.

Preparation of High-Carbon Steel for Electroplating, Recommended Practice for, ASTM B 242-54; ASA G53.10-1956 $0.30

Requirements for the base metal and description of preparatory cycle for electroplating on high-carbon steel producing a minimum of hydrogen embrittlement and maximum adhesion of the electrodeposited metal.

Preparation of Zinc-Base Die Castings for Electroplating, Recommended Practice for, ASTM B 252-53; ASA G53.11-1956 $0.30

Practice for preparatory cycle for electroplating zinc-base die castings, including requirements for zinc-base die castings and procedures for polishing, buffing, precleaning, electrocleaning, and copper strike.

Preparation of and Electroplating on Aluminum Alloys, Recommended Practice for, ASTM B 253-53; ASA G53.12-1956 $0.30
Requirements for aluminum and procedures for cleaning and conditioning treatments, zinc immersion, copper strike, brass, cadmium, copper, chromium, gold, nickel, silver, tin and zinc plating, racking, and rinsing for electroplating on aluminum alloys.

Preparation of and Electroplating on Stainless Steel, Recommended Practice for, ASTM B 254-53; ASA G53.13-1956 .30
Requirements for stainless steel and procedures for cleaning, racking, activation, rinsing, plating, stripping, and post-plating operations for electroplating on stainless steel.

Preparation of Copper and Copper-Base Alloys for Electroplating, Recommended Practice for, ASTM B 281-53T; ASA G53.14-1956 $0.30
Description of cleaning and conditioning cycle preparatory to electroplating on copper and copper-base alloys.
Sponsor: American Society for Testing Materials

In Standards Board

Gray Iron Castings, Specifications for, ASTM A 48-56; ASA G25.1 (Revision of ASTM A 48-48; ASA G25.1-1948)
Sponsor: American Society for Testing Materials

Thermometers, Specifications for, ASTM E 1-56; ASA Z71.1- (Revision of ASTM E 1-55; ASA Z71.1-1956)
Sponsor: American Society for Testing Materials

Standard Submitted

Pyrometric Cone Equivalent (P.C.E.) of Refractory Materials, Method of Test for, ASTM C 24-56; ASA A111.4- (Revision of ASTM C 24-46; ASA A111.4-1955)
Sponsor: American Society for Testing Materials

Fireclay Refractories, Classification of, ASTM C 27-56; ASA A111.5 (Revision of ASTM C 27-41; ASA A111.5-1955)
Sponsor: American Society for Testing Materials

MECHANICAL

American Standards Published

Seamless Steel Boiler Tubes, Specifications for, ASTM A 83-55T; ASA B36.12-1956 $0.30

Electric-Resistance-Welded Steel and Open-Hearth Iron Boiler Tubes, Specifications for, ASTM A 178-55T; ASA B36.13-1956 $0.30

Seamless Steel Boiler Tubes for High-Pressure Service, Specifications for, ASTM A 192-55T; ASA B36.14-1956, $0.30

Seamless Alloy Steel Boiler, Superheater, and Heat Exchanger Tubes, Specifications for, ASTM A 213-55T; ASA B36.17-1956 $0.30

Electric-Resistance-Welded Steel Boiler and Superheater Tubes for High-Pressure Service, Specifications for, ASTM A 226-55T; ASA B36.18-1956 $0.30

Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 179-55T; ASA B36.28-1956 $0.30
These specifications cover seamless cold-drawn low-carbon steel tubes for tubular heat exchangers and condensers, describing the various tests on which acceptance is to be based, listing chemical requirements and describing the method of analysis.

Seamless Cold-Drawn Intermediate Alloy-Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 199-55T; ASA B36.29-1956 $0.30
These specifications cover several grades of chromium-molybdenum and chromium-molybdenum-silicon intermediate alloy-steel tubes, in sizes ½ in. to but not including 2 inches in outside diameter. They give process and method of manufacture, list chemical composition, give method of check analysis, and describe various tests on which acceptance is based.

Electric-Resistance-Welded Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 214-55T; ASA B36.32-1956 $0.30

Welded Austenitic Stainless Steel Boiler, Superheater, Heat Exchanger, and Condenser Tubes, Specifications for, ASTM A 249-55T; ASA B36.33-1956 $0.30

Seamless and Welded Austenitic Stainless Steel Tubing for General Service, Specifications for, ASTM A 269-55; ASA B36.37-1956 $0.30

Seamless Austenitic Chromium-Nickel Steel Still Tubes for Refinery Service, Specifications for, ASTM A 271-55; ASA B36.39-1956 $0.30
Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service, Specifications for, ASTM A 194-55T; ASA G38.1-1956 $0.30
Requirements covering steel nuts for bolts used in high-pressure or high-temperature service, or both. Ten grades of material for services varying in degree of severity are covered.
Sponsor: American Society for Testing Materials

American Standard Approved

Gage Blanks, CS 8-1951, with 1955 Supplement; ASA B47.1-1956 (Revision of ASA B47.1-1941)
Developed by: American Gauge Design Committee

In Board of Review

Conveyor Terms and Definitions, B75
Sponsor: Conveyor Equipment Manufacturers Association

Withdrawal Being Considered

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, ASTM A 215-44; ASA G51.1-1944
Sponsor: American Society for Testing Materials

NUCLEAR ENERGY

In Standards Board

Glossary of Terms in Nuclear Science and Technology, N1
Submitted by: National Research Council

OFFICE EQUIPMENT

In Standards Board

Ring, Memo, and Post Binder Sheet Sizes and Ring and Post Data, Specifications for, X2.4.3
Sponsor: National Office Management Association

PHOTOGRAPHY

American Standards Approved

Dimensions for 35mm Motion-Picture Negative Raw Stock, Dimensions for, PH22.34-1956 (Revision of Z22.34-1949)
Sponsor: Society of Motion Picture and Television Engineers

Dimensions for 35mm Motion-Picture Film, Alternate Standard for Positive Raw Stock, Dimensions for, PH22.102-1956
Sponsors: Society of Motion Picture and Television Engineers

In Standards Board

Amateur Roll Film, Backing Paper, and Film Spools, Dimensions for, PH1.21- Revision of Z38.1.7-1950)

Photographic Dry Plates (Inch and Centimeter Sizes), Dimensions for, PH1.23- (Revision of Z38.1.30-1951 and Z38.1.31-1944)

Film Packs, Dimensions for, PH1.26- (Revision of Z38.1.1-1951)

Spooling Photographic Paper for Recording Instruments, Requirements for, PH1.27-
Sponsor: Photographic Standards Board

Evaluating Films for Monitoring X-rays and Gamma Rays Having Energies up to 2 Million Electron Volts, Method for, PH2.10
Sponsor: Photographic Standards Board

Melting Point of a Nonsupport Layer of Films, Plates, and Papers in Distilled Water, Method for Determining, PH4.11- (Revision of Z38.8.20-1948)

Photographic Grade Mono-Methyl-Para-Aminophenol Sulphate, Specifications for, PH4.125- (Revision of Z38.8.125-1948)

2, 4-Diaminophenol Hydrochloride, Specifications for, PH4.127- (Revision of Z38.8.127-1948)

Para-Hydroxyphenylglycine, Specifications for, PH4.128- (Revision of Z38.8.128-1949)

Para-Aminophenol Hydrochloride, Specifications for, PH4.129- (Revision of Z38.8.129-1948)

Pyrogallic Acid, Specifications for, PH4.130- (Revision of Z38.8.130-1948)

Para-Phenylenediamine, Specifications for, PH4.132- (Revision of Z38.8.132-1948)

Para-Phenylenediamine Dihydrochloride, Specifications for, PH4.133- (Revision of Z38.8.133-1948)

Chlorohydroquinone, Specifications for, PH4.134-(Revision of Z38.8.134-1948)

Sodium Thiocyanate, Specifications for, PH4.177-

Potassium Chloride, Specifications for, PH4.202-(Revision of Z38.8.202-1948)

Sodium Chloride, Specifications for, PH4.203-(Revision of Z38.8.203-1948)

5-Methlybenzotriazole, Specifications for, PH4.205-(Revision of Z38.8.205-1948)

6-Nitrobenzimidazole Nitrate, Specifications for, PH4.206- (Revision of Z38.8.206-1948)

Sodium Hydroxide, Specifications for, PH4.225-(Revision of Z38.8.225-1948)

Potassium Hydroxide, Specifications for, PH4.226-(Revision of Z38.8.226-1948)

Potassium Carbonate, Specifications for, PH4.229-(Revision of Z38.8.229-1948)

Ammonium Hydroxide, Specifications for, PH4.232-(Revision of Z38.8.232-1948)
Sponsor: Photographic Standards Board

PIPE AND FITTINGS

American Standards Published

Welded Wrought-Iron Pipe, Specifications for, ASTM A 72-55; ASA B36.2-1956 $0.30

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

SAFETY

American Standards Approved

Portable Metal Ladders, Safety Code for, A14.2-1956

General requirements, specifications and methods of test for light-weight portable metal ladders such as: rung ladders, step ladders, and trestle ladders. Also includes section on care and use of these ladders.

Fixed Ladders, Safety Code for, A14.3-1956

Design and construction requirements for fixed ladders; their attachment to buildings, towers, chimneys, or other structures, and accessories to be used with them.

Sponsors: National Association of Mutual Casualty Companies; American Society of Safety Engineers; American Ladder Institute

Use, Care, and Protection of Abrasive Wheels, Safety Code for, B7.1-1956 (Revision of B7.1-1947)

Sponsors: Grinding Wheel Institute; International Association of Governmental Labor Officials

In Board of Review

Paper and Pulp Mills, Safety Code for, P1.1 (Revision of P1-1936)

Sponsor: National Safety Council; American Paper and Pulp Association

Project Being Considered

Aerial Passenger Tramways, Safety Requirements for

Requested by: Eastern Ski Area Operators Association

TEXTILES

Withdrawal Being Considered

General Methods of Testing Cotton Fibers, ASTM D 414-54T; ASA L14.23-1951

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Use, Care, and Protection of Abrasive Wheels, B7—

Sponsors: Grinding Wheel Institute; International Association of Governmental Labor Officials

The revised edition of the American Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, which is listed as approved this month (see above), has one outstanding feature from a publication viewpoint. The committee calls this an "informational approach." The text of the new standard is being published in two columns. The column on the left will contain the approved safety requirements; the column on the right will offer explanations and suggestions for putting the standard into use. Explanations and suggestions will be placed exactly opposite the standard requirement to which they apply.

The new "informational approach" was given a test by one of the sponsor organizations before the revised edition was approved by the sponsor and submitted to ASA for approval. Copies were sent to members of the Association with a request for their reactions. The sponsor reports: "All expressed approval of the new method of presentation." One member reported: "I have had two or three members of my staff to review this code and they are highly pleased with the contents and the way the code is written. I am thoroughly convinced that this method is preferable, as it is much more educational to the reader as well as to the persons enforcing the law where the standards are adopted."

Model Laws and Ordinances, Z56—

Members of this committee have been asked to vote on whether to discontinue the project. The project has been inactive since its second meeting, held in 1950. At this meeting a subcommittee was appointed to prepare recommendations on the committee's future program. As a result of the committee's work, an analysis of the status and use of nationally recognized standards in State laws and local ordinances was prepared and published.

In requesting that the project be dropped, the National Electrical Manufacturers Association explained: "At the time the project was originally initiated by NEMA, it appeared that it would be advantageous to have the NEMA Drafts of a Model State Law and a Municipal Ordinance Providing for the Inspection of Electrical Installations approved as American Standards. However, since that time, which is now some ten years, it has become apparent that there is little likelihood of obtaining the consensus of all concerned in support of NEMA's model laws and ordinances as an American Standard. Furthermore, it is believed that the publication by Committee Z56 of the document *Nationally Recognized Standards in State Laws and Local Ordinances* had aided materially in providing a general understanding of the problem."

Safety on Ski Lifts—

Safety for skiers and sightseers was the subject of a conference called by the American Standards Association in October, and is now being considered as a new project for development of a safety standard.

The death of a sightseer in an accident that occurred while he was riding a chair lift to the top of a New Hampshire mountain led to consideration of the problem. The conference was called as the result of a request by the Eastern Ski Area Operators Association. The Association believes that an American Standard, representing the experience of all groups concerned, would serve as a guide to ski area operators, manufacturers of equipment, and to states that plan safety regulations.

ASA invited the groups concerned to meet October 25 to determine whether there is sufficient desire for a safety standard to warrant setting up a project.

Twenty organizations were represented at the conference, including manufacturers of materials and equipment, safety and insurance organizations, electrical manufacturers, state departments, and ski associations.

Their decision was to ask the American Standards Association to initiate a safety project with a sectional committee to develop the standard. The scope of the committee's work as proposed would cover recreational passenger transportation, including aerial tramways, rope tows, cable tows, chair lifts, T-bars, J-bars, and ski mobiles. However, it would not include mining transportation, funicular railways, cog railways, or ordinary cable cars running on rails.

The request of the conference has been referred to the Safety Standards Board which is voting on whether the project should be initiated under ASA procedures, with the American Society of Mechanical Engineers and the Eastern Ski Area Operators Association as sponsors.

Organizations represented at the conference on October 25 were: American Society of Mechanical Engineers; American Society for Testing Materials; Association of Casualty and Surety Companies; Bethlehem Steel Company; E. G. Constam; Conveyor Equipment Manufacturers Association; Eastern Ski Area Operators Association; B. F. Goodrich Company; Hall Engineering Company; National Association of Mutual Casualty Companies; National Bureau of Standards; National Electrical Manufacturers Association; New Hampshire Department of Public Works and Highways; Riblet Tramway Company; Robbins and White, Inc; John A. Roebling's Sons Corporation; Trams, Inc; U.S. Steel Corporation — American Steel and Wire Division, and Columbia-Geneva Steel Division; U.S. Eastern Amateur Ski Association; Wire Rope Technical Board.

Standards Outlook

by Leo B. Moore

Standards Personnel

When we consider people for standards activity, we usually seek engineers who possess widely divergent skills, such as highly technical and acutely human abilities. It may well be that such all-around individuals are not generally available or are not fully developed in each of these different respects and for that reason certain kinds of operating problems arise. Possibly a mixing of persons having these special abilities and working together as a team might provide a more effective standards group.

The specifications on a standards man read like those for any highly successful man in industry. First, he must be technically trained and technically minded, capable of understanding the engineering processes of the company as well as the production and purchasing problems associated with these processes. In addition to these technical skills and interests, he must be aware of the total product problems of his company and of the industry and have some concept of the variety of attacks that have been used on them. With this broad base of knowledge, he must have developed through experience an ability to make sound business decisions and must appreciate the impact of these decisions on the company and its people. In this area, he must be especially aware of the human relations problems that arise in the course of his decision-making and must be able to cope with them in an easy, effective manner. Most standards engineers will agree to this general delineation.

From an operations point of view, standards men have some difficulty with the technical and decision-making areas, but the bulk of the problems lie in the human area. This general observation can be made of most technical people because this is the nature of their interests and training. Characteristically, engineers are strongly oriented by their education and in their attitudes towards individuality and self-sufficiency.

In the solution of practical, industrial problems with many related factors, both technical and non-technical, group action on the part of people of differing backgrounds has been most effective. This is the basis for the committee structure in business organization and the use of such groups to appraise the total situation before decisions are reached. The most publicized use of this notion has been in the area known as Operations Research. The bringing together of many talents to view a situation and to wrestle with a problem as a total issue has had most satisfying results, even though the group members were not completely expert in the area under consideration.

Perhaps standards groups would benefit from the cross-fertilization of ideas from non-engineers. Either on a permanent or on a temporary basis, we might bring in such men to see and hear their reactions to standards problems.

•

Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

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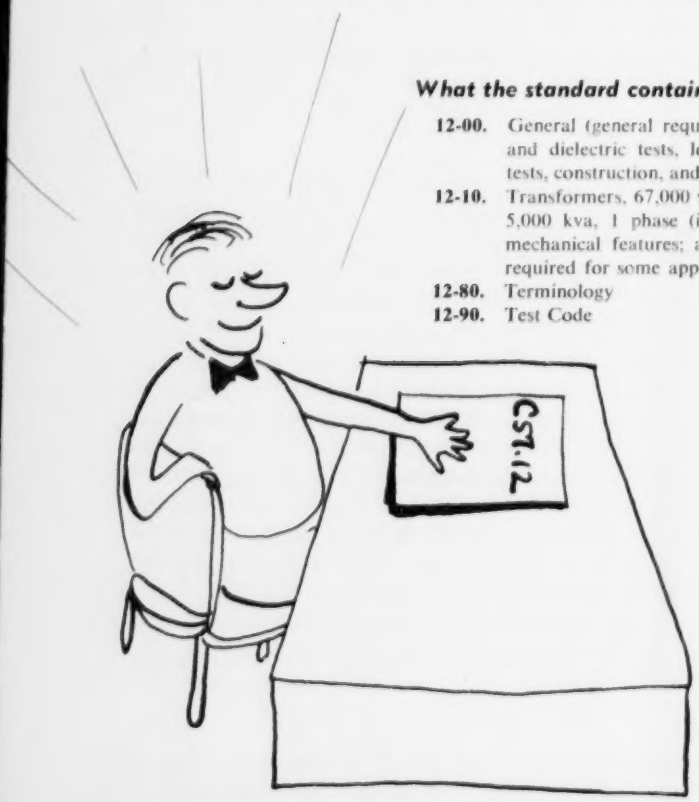

What the standard contains—

12-00. General (general requirements covering service conditions, ratings, insulation levels and dielectric tests, losses and impedance, ratio and regulation, temperature rise, tests, construction, and short-circuit characteristics)

12-10. Transformers, 67,000 volts and below, 501 through 10,000 kva, 3 phase; 501 through 5,000 kva, 1 phase (includes Part 1, Basic standard electrical characteristics and mechanical features; and Part 2, other characteristics and features which may be required for some applications

12-80. Terminology

12-90. Test Code

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